

To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Wed 6/7/2017 8:01:02 PM
Subject: Smith Congratulates NASA's New Astronauts



For Immediate Release | June 7, 2017

Media Contacts: [Kristina Baum](#), [Thea McDonald](#)

Smith Congratulates NASA's New Astronauts

WASHINGTON- U.S. House Science, Space, and Technology Committee Chairman Lamar Smith (R-Texas), along with Vice President Mike Pence, Senator Ted Cruz (R-Texas) and Space Subcommittee Chairman Brian Babin (R-Texas), today congratulated the National Aeronautics and Space Administration's (NASA) new class of astronauts at the 2017 Astronaut Selection Announcement at the Lyndon B. Johnson Space Center.

Chairman Smith: "Our American astronauts are the front line of U.S. exploration and discovery. This new class of astronauts is invaluable for the inspiration they provide to future generations of astronauts and the many studying STEM fields worldwide. I join Vice President Pence in congratulating our new NASA astronauts, and I look forward to their exploration of deep space and the discoveries they will make. President Trump's reinstatement of the National Space Council reinvigorates our American spirit and opens the door to new opportunities in space, in education, and in our economy. Today's announcement enhances USA leadership in space on a global scale."



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To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Thur 6/15/2017 2:22:27 PM
Subject: Chairman Smith Opening Statement- Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry



For Immediate Release | June 15, 2017

Media Contact: [Kristina Baum](#), [Thea McDonald](#)

Chairman Smith Opening Statement

Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry

WASHINGTON - U.S. Rep. Lamar Smith (R-Texas), chairman of the U.S. House Science, Space, and Technology Committee, delivered the following opening statement today at the joint Subcommittee on Oversight and Subcommittee on Research and Technology hearing, *Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry*. Today's witness are **Mr. Salim Neino**, chief executive officer, Kryptos Logic; **Dr. Charles H. Romine**, director, Information Technology Laboratory, National Institute of Standards and Technology; **Mr. Gregory J. Touhill**, CISSP, CISM; brigadier general, USAF (ret); adjunct professor, Cybersecurity & Risk Management, Carnegie Mellon University, Heinz College; **Dr. Hugh Thompson**, chief technology officer, Symantec.

As prepared for delivery:

I would like to thank Oversight Subcommittee Chairman LaHood and Research

and Technology Subcommittee Vice Chairman Abraham for holding today's hearing.

In the wake of last month's WannaCry ransomware attack, today's hearing is a necessary part of an important conversation the federal government must have as we look for ways to improve our federal cybersecurity posture. While WannaCry failed to compromise federal government systems, it is almost certain that outcome was due in part to a measure of chance.

Rather than seeing this outcome as a sign of bulletproof cybersecurity defenses, we must instead increase our vigilance to better identify constantly evolving cybersecurity threats. This is particularly true since many cyber experts predict that we will experience an attack similar to WannaCry that is more sophisticated in nature, carrying with it an even greater possibility of widespread disruption and destruction. Congress should not allow cybersecurity to be ignored across government agencies.

I am proud of the work the Committee has accomplished to improve the federal government's cybersecurity posture.

During the 114th congress, the Committee conducted investigations into the Federal Deposit Insurance Corporation, the Internal Revenue Service, and the Office of Personnel Management, as well as passed key legislation aimed at providing the government with the tools it needs to strengthen its cybersecurity posture.

President Trump understands the importance of bolstering our cybersecurity. He signed a recent Executive Order on cybersecurity, which is a vital step toward ensuring the federal government is positioned to detect, deter, and defend against emerging threats. Included in the President's Executive Order is a provision mandating that Executive Branch departments and agencies implement NIST's Cybersecurity Framework.

While continuously updating its Cybersecurity Framework, NIST takes into account innovative cybersecurity measures from its private sector partners.

NIST's collaborative efforts help to ensure that those entities that follow the framework are aware of the most pertinent, effective, and cutting edge cybersecurity measures.

I strongly believe the President's decision to make NIST's Framework mandatory for the federal government will serve to strengthen the government's ability to defend its systems against advanced cyber threats like with the recent WannaCry ransomware attack.

Similarly, the Committee's NIST Cybersecurity Framework, Assessment, and

Auditing Act of 2017, sponsored by Representative Abraham, draws on findings from the Committee's numerous hearings and investigations related to cybersecurity, which underscored the immediate need for a rigorous approach to protecting U.S. cybersecurity infrastructure and capabilities.

Like the President's recent Executive Order, this legislation promotes federal use of the NIST Cybersecurity Framework by providing guidance that agencies may use to incorporate the Framework into risk mitigation efforts. Additionally, the bill directs NIST to establish a working group with the responsibility of developing key metrics for federal agencies to use.

I hope that our discussions here today will highlight distinct areas where cybersecurity improvement is necessary, while offering recommendations to ensure cybersecurity objectives stay at the forefront of our national security policy discussions.

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To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Thur 6/15/2017 2:14:04 PM
Subject: Vice Chairman Abraham Opening Statement- Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry



For Immediate Release | June 15, 2017

Media Contact: [Kristina Baum](#), [Thea McDonald](#)

Vice Chairman Abraham Opening Statement

Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry

WASHINGTON - U.S. Rep. Ralph Lee Abraham (R-La.), vice chairman of the U.S. House Science, Space, and Technology Committee's Subcommittee on Research and Technology, delivered the following opening statement today at the joint Subcommittee on Oversight and Subcommittee on Research and Technology hearing, *Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry*. Today's witness are **Mr. Salim Neino**, chief executive officer, Kryptos Logic; **Dr. Charles H. Romine**, director, Information Technology Laboratory, National Institute of Standards and Technology; **Mr. Gregory J. Touhill**, CISSP, CISM; brigadier general, USAF (ret); adjunct professor, Cybersecurity & Risk Management, Carnegie Mellon University, Heinz College; **Dr. Hugh Thompson**, chief technology officer, Symantec.

As prepared for delivery:

Thank you Mr. Chairman.

Over the last few years, we have seen an alarming increase in the number and intensity of cyber-attacks. These attacks by cyber criminals and by unfriendly governments have compromised the personal information of millions of Americans, jeopardized thousands of our businesses and their employees, and threatened interruption of critical public services. The recent WannaCry ransomware attack demonstrates that cyber-attacks are continuing to go from bad to worse.

This most recent large-scale cyber attack affected more than one to two million systems in more than 190 countries. Nevertheless, it appears that the impact could have been much more catastrophic considering how fast this ransomware spread.

While organizations and individuals within the United States were largely unscathed, due in part to a security researcher identifying a web-based “kill switch,” the potential destructiveness of WannaCry warns us to expect similar attacks in the future. Before those attacks happen, we need to make sure that our information systems are ready.

During a Research and Technology Subcommittee hearing earlier this year, a witness representing the U.S. Government Accountability Office (GAO) testified that, “Over the past several years, GAO has made about 2,500 recommendations to federal agencies to enhance their information security programs and controls. As of February 2017, about 1,000 recommendations had not been implemented.”

It is clear that the status quo in federal government cyber security is a virtual invitation for more cyber-attacks. We must take strong steps in order to properly secure our systems and databases before another cyber-attack like WannaCry literally puts our government up for ransom.

On March 1, 2017, this Committee approved H.R. 1224, the NIST Cybersecurity Framework, Assessment, and Auditing Act of 2017, a bill that I introduced as part of my ongoing interest over the state of our nation’s cybersecurity.

This bill takes concrete steps to help strengthen Federal government cybersecurity. The most important steps are encouraging federal agencies to adopt the National Institute of Standards and Technology’s (NIST) Cybersecurity Framework, which is used by many private businesses, and directing NIST to initiate individual cybersecurity audits of priority Federal agencies to determine the extent to which each agency is meeting the information security standards

developed by the Institute.

NIST's in-house experts develop government-wide technical standards and guidelines under the Federal Information Security Modernization Act of 2014. And NIST experts also developed, through collaborations between government and private sector, the Framework for Improving Critical Infrastructure Cybersecurity that federal agencies are now required to use pursuant to the President's recent Cybersecurity Executive Order. I was very pleased to read that language.

Considering the growing attempts to infiltrate information systems, there is an urgent need to assure Americans that all federal agencies are doing everything that they can to protect government networks and sensitive data. The status quo simply isn't working. We can't put up with more bureaucratic excuses and delays.

NIST's cyber expertise is a singular asset. We should take full advantage of that asset, starting with the very important step of annual NIST cyber audits of high priority federal agencies.

As cyber-attacks and cyber criminals continue to evolve and become more sophisticated, our government's cyber defenses must adapt, too, in order to protect vital public services and shield hundreds of millions of Americans' confidential information.

We will hear from our witnesses today about lessons learned from the WannaCry attack and how the government can bolster the security of its systems. We must keep in mind that the next cyber attack is just around the corner, and it could have a far greater impact than what we have seen thus far.

Our government systems need to be better protected, and that starts with more accountability, responsibility, and transparency by federal agencies.

Thank you and I look forward to hearing from our panel.

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To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Thur 6/15/2017 2:04:43 PM
Subject: Chairman LaHood Opening Statement- Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry



For Immediate Release | June 15, 2017

Media Contact: [Kristina Baum](#), [Thea McDonald](#)

Chairman LaHood Opening Statement

Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry

WASHINGTON - U.S. Rep. Darin LaHood (R-Ill.), chairman of the U.S. House Science, Space, and Technology Committee's Subcommittee on Oversight, delivered the following opening statement today at the joint Subcommittee on Oversight and Subcommittee on Research and Technology hearing, *Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry*. Today's witness are **Mr. Salim Neino**, chief executive officer, Kryptos Logic; **Dr. Charles H. Romine**, director, Information Technology Laboratory, National Institute of Standards and Technology; **Mr. Gregory J. Touhill**, CISSP, CISM; brigadier general, USAF (ret); adjunct professor, Cybersecurity & Risk Management, Carnegie Mellon University, Heinz College; **Dr. Hugh Thompson**, chief technology officer, Symantec.

As prepared for delivery:

Good morning and welcome to today's joint subcommittee hearing: "Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry."

I would like to welcome Chairman Smith, Oversight Subcommittee Ranking Member Beyer, Research and Technology Subcommittee Chairman Abraham, Research and Technology Ranking Member Lipinski, Members of the Subcommittees, our expert witnesses, and members of the audience.

Cybersecurity—a concept we hear mentioned frequently, especially in this period of rapidly emerging threats—is an ever-evolving concept. Maintaining an effective cybersecurity posture requires constant vigilance as new threats emerge and old ones return. Too often, however, when we hear about the importance of cybersecurity we are left without concrete steps to take to ensure our systems are best positioned to defend against emerging threats. One of the goals of today's hearing is to learn about real, tangible measures the government can take to ensure its IT security systems are appropriately reinforced to defend against new and emerging threats, including novel and sophisticated ransomware threats.

The specific focus of today's hearing will be the recent WannaCry ransomware attack, a new type of ransomware infection, which affected over one million unique systems last month in a worldwide attack that impacted nearly every country in the world.

Although the concept of ransomware is not new, the type of ransomware employed by WannaCry was novel. WannaCry worked by encrypting documents on a computer, instructing victims to pay \$300 in bitcoin in order to regain access to the user's documents. Unlike typical forms of ransomware, however, WannaCry signaled the ushering in of a new type of "worming" ransomware, which caused the attack to spread faster and more rapidly with each new infection. In light of the novelty built into WannaCry's method of attack, cybersecurity experts, including those we will hear from today, have expressed significant concerns that WannaCry is only a preview of a more sophisticated ransomware infection that many believe will inevitably be launched by hackers in the near future.

Beginning May 12, 2017, the WannaCry ransomware infection moved rapidly across Asia and Europe, eventually hitting the United States. The attack infected 7,000 computers in the first hour and 110,000 distinct IP addresses in two days and in almost 100 countries, including the U.K., Russia, China, Ukraine, and India. Experts now believe WannaCry affected approximately 1 to 2 million unique systems worldwide prior to activating the kill switch.

Close to my district, Cook County's IT systems were compromised by WannaCry—

reportedly one of a few local governments subject to the attack. Although Cook County has worked to appropriately patch their systems, it is important that we ensure that all vulnerabilities are appropriately remedied in the event of a more sophisticated attack.

Fortunately, the hackers responsible for WannaCry mistakenly included a kill switch, which was uncovered by an employee of Kryptos Logic and used to terminate the attack. The Kryptos Logic employee exploited a key mistake made by the hackers when he registered the domain connected to the ransomware attack. Experts estimate that the kill switch prevented 10 to 15 million unique worldwide systems infections and reinfections.

Although based on information available thus far the federal government's systems were fortunately spared from WannaCry, we want to ensure that the government is sufficiently prepared in the likely event of a more sophisticated attack. Additionally, the Committee wants to hear what Congress can do to appropriately address this climate of new and emerging cybersecurity threats.

Through the lens of the aftermath of WannaCry, today's witnesses will help shed light on key steps the government should take to ensure its systems are protected. We will also hear today about how public-private partnerships are an instrumental tool to help bolster the government's cybersecurity posture. Finally, we will learn about how the President's recent cybersecurity order, which makes NIST's cybersecurity framework mandatory on the Executive Branch, is a significant step toward ensuring the federal government's cybersecurity posture incorporates the most innovative security measures to defend against evolving threats.

It is my hope that our discussions here today will highlight areas where improvement is necessary, while offering recommendations as we move forward to ensure the federal government is prepared to respond to emerging cybersecurity threats. I look forward to hearing from our distinguished witnesses.

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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Price, Wendi (Inhofe)
Sent: Tue 6/13/2017 7:08:50 PM
Subject: RE: Is there a red line of this I could get for Pruitt?

OK. Its sitting on my desk.

-----Original Message-----

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Tuesday, June 13, 2017 2:25 PM
To: Price, Wendi (Inhofe) <Wendi_Price@inchofe.senate.gov>
Subject: RE: Is there a red line of this I could get for Pruitt?

Thank you. I didn't see this. This is great. I can come get it.

-----Original Message-----

From: Price, Wendi (Inhofe) [mailto:Wendi_Price@inchofe.senate.gov]
Sent: Tuesday, June 13, 2017 12:29 PM
To: Ryan Jackson [redacted] Jackson, Ryan
<jackson.ryan@epa.gov>
Subject: FW: Is there a red line of this I could get for Pruitt?

Hey! Just wanted to make sure you saw this email? Would you like me to have someone run this down to your office or do you want to pick it up?

-----Original Message-----

From: Price, Wendi (Inhofe)
Sent: Thursday, June 08, 2017 1:13 PM
To: 'Jackson, Ryan' <jackson.ryan@epa.gov>; Holland, Luke (Inhofe)
<Luke_Holland@inchofe.senate.gov>
Subject: RE: Is there a red line of this I could get for Pruitt?

Look what we have back. I have it sitting on my desk. Let me know if you or someone want to pick it up or how we should get to you.

-----Original Message-----

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Wednesday, June 07, 2017 2:03 PM
To: Holland, Luke (Inhofe) <Luke_Holland@inchofe.senate.gov>; Price, Wendi (Inhofe)
<Wendi_Price@inchofe.senate.gov>
Subject: Is there a red line of this I could get for Pruitt?

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Good, Linda (Cochran)
Sent: Tue 6/6/2017 6:23:46 PM
Subject: FW: Resume for open position
Ex. 6 - Personal Privacy Resume.pdf

One more time?

From: Good, Linda (Cochran)
Sent: Tuesday, June 06, 2017 12:58 PM
To: 'jackson.ryan@epa.gov' <jackson.ryan@epa.gov>
Subject: FW: Resume for open position

Trying again – I never got a kickback? Please confirm you received this.

From: Good, Linda (Cochran)
Sent: Tuesday, May 23, 2017 9:03 AM
To: 'jackson.ryan@epa.gov' <jackson.ryan@epa.gov>
Subject: Resume for open position

Ryan – It was good to talk to you yesterday and to hear you have made a smooth transition to EPA. Administrator Pruitt appears to be a solid man and should do a good job for EPA.

I am happy to forward Ex. 6 - Personal Privacy resume.

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

I will continue to forward any suitable candidates to you and wish you the best in your new position.

Linda



LINDA GOOD

Deputy Chief of Staff

OFFICE OF UNITED STATES SENATOR THAD COCHRAN

113 Dirksen Senate Office Building | Washington, DC 20510
Direct phone: 202.224.6406

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Holland, Luke (Inhofe)
Sent: Tue 6/13/2017 6:49:33 PM
Subject: Region 6

Who do you want us to tell the WH we want for Region 6 @ EPA? They're asking who we want.

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Pfrang, Steve
Sent: Tue 6/6/2017 6:21:12 PM
Subject: FW: Rep. LaHood Constituent Meeting Request
Letter to LaHood for Doug Brown.pdf

Hey buddy – wanted to follow-up on this email from last week Friday. Realize it hasn't been that long since I first emailed, but the locals are getting a little antsy since it's next week and I said I would follow-up. If you could push me to someone else on your team, that would be fine, I just only know you, so not sure who else to reach out to.

Thanks Ryan!

Steve

From: Pfrang, Steve
Sent: Friday, June 2, 2017 3:37 PM
To: Jackson.ryan@epa.gov
Subject: Rep. LaHood Constituent Meeting Request

Hey Ryan –

Hope all is well with you! Attached is a meeting request from the Chief Utility Engineer in Springfield, IL (in our district) who is going to be in DC June 14-16 and would like to meet with someone on your team regarding some water quality protection issues. His letter to Darin with the meeting request is attached to this email. Is there any chance someone on your team might be able to meet with him during one of the time slots he's available? Contact info for the Springfield, IL Chamber is included in the attached document, it can be run through them or I'm obviously happy to help as well.

Thanks for considering Ryan! Talk soon I'm sure –

Regards,

Steve

Steven Pfrang

Chief of Staff

Rep. Darin LaHood (IL-18)

202.226.0133

June 2, 2017

The Honorable Darin LaHood
Congressman 18th District
1424 Longworth HOB
Washington, DC 20515

Dear Congressman LaHood:

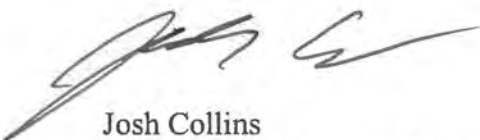
Thank you for all the work you and your staff has done to help assist us with our community leader's annual trip to Washington DC. Doug Brown, Chief Utility Engineer for Springfield City Water Light & Power (CWLP) will be joining us on this trip which is scheduled for June 14 – June 16. Doug would appreciate your assistance on talking to officials within the Environmental Protection Agency regarding water quality protection for Lake Springfield as well as a secondary source of water for the City.

Dour Brown is currently available during the times listed below, although we still need to schedule a time to meet you and Congressman Davis:

June 14, 2 – 4 pm
June 15, 8 am – 1 pm
June 16, 8 am – 10 am

Please let us know if you have any questions or concerns and thank you again for your consideration.

Sincerely,



Josh Collins
Director of Business & Community Development

Lead • Influence • Impact

To: Hupp, Sydney[hupp.sydney@epa.gov]
Cc: Jackson, Ryan[jackson.ryan@epa.gov]; Hupp, Millan[hupp.millan@epa.gov]; McMurray, Forrest[mcmurray.forrest@epa.gov]
From: Gourdikian, Alexandra
Sent: Tue 6/13/2017 12:57:32 PM
Subject: RE: Leader McCarthy Phone Call Request

Great, thanks. What is the best number to call?

-----Original Message-----

From: Hupp, Sydney [mailto:hupp.sydney@epa.gov]
Sent: Tuesday, June 13, 2017 8:23 AM
To: Gourdikian, Alexandra <Alexandra.Gourdikian@mail.house.gov>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Hupp, Millan <hupp.millan@epa.gov>; McMurray, Forrest <mcmurray.forrest@epa.gov>
Subject: RE: Leader McCarthy Phone Call Request

Yes, it does! I believe you are planning to call our office? Apologies as I was out yesterday, have you been given the call in information?

Thank you!

Sydney Hupp
Executive Scheduler
Office of the Administrator

Ex. 6 - Personal Privacy (C)

-----Original Message-----

From: Gourdikian, Alexandra [mailto:Alexandra.Gourdikian@mail.house.gov]
Sent: Tuesday, June 13, 2017 7:58 AM
To: Hupp, Sydney <hupp.sydney@epa.gov>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Hupp, Millan <hupp.millan@epa.gov>; McMurray, Forrest <mcmurray.forrest@epa.gov>
Subject: RE: Leader McCarthy Phone Call Request

Hi all-- checking in does 2:45PM ET today, June 13 work for a phone call? Thanks!

-----Original Message-----

From: Gourdikian, Alexandra
Sent: Monday, June 12, 2017 4:58 PM
To: 'Hupp, Sydney' <hupp.sydney@epa.gov>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Hupp, Millan <hupp.millan@epa.gov>; McMurray, Forrest <mcmurray.forrest@epa.gov>
Subject: RE: Leader McCarthy Phone Call Request

Yes- does 2:45PM ET tomorrow, June 13 work?

-----Original Message-----

From: Hupp, Sydney [mailto:hupp.sydney@epa.gov]
Sent: Monday, June 12, 2017 4:52 PM
To: Gourdikian, Alexandra <Alexandra.Gourdikian@mail.house.gov>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Hupp, Millan <hupp.millan@epa.gov>; McMurray, Forrest <mcmurray.forrest@epa.gov>
Subject: Re: Leader McCarthy Phone Call Request

Hey Alexandra,

I don't think he is going to be able to make the call. So so sorry for the last minute. Can we look at scheduling for tomorrow?

Thank you!

Sent from my iPhone

> On Jun 12, 2017, at 3:40 PM, Gourdikian, Alexandra <Alexandra.Gourdikian@mail.house.gov> wrote:
>

> Any update here? Are we still on schedule for a call at 5:00PM? Thanks!

> -----Original Message-----

> From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]

> Sent: Monday, June 12, 2017 10:45 AM

> To: Gourdikian, Alexandra <Alexandra.Gourdikian@mail.house.gov>; Hupp, Sydney <hupp.sydney@epa.gov>

> Cc: Hupp, Millan <hupp.millan@epa.gov>; Duncan, Chris <Chris.Duncan@mail.house.gov>

> Subject: RE: Leader McCarthy Phone Call Request

> I'll have to get back with you.

> -----Original Message-----

> From: Gourdikian, Alexandra [mailto:Alexandra.Gourdikian@mail.house.gov]

> Sent: Monday, June 12, 2017 10:44 AM

> To: Jackson, Ryan <jackson.ryan@epa.gov>; Hupp, Sydney <hupp.sydney@epa.gov>

> Cc: Hupp, Millan <hupp.millan@epa.gov>; Duncan, Chris <Chris.Duncan@mail.house.gov>

> Subject: RE: Leader McCarthy Phone Call Request

> It'd be best if the Leader could initiate the call, in case we are running a few minutes behind. What's the best number for the Administrator? Thanks!

> -----Original Message-----

> From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]

> Sent: Monday, June 12, 2017 9:42 AM

> To: Hupp, Sydney <hupp.sydney@epa.gov>

> Cc: Gourdikian, Alexandra <Alexandra.Gourdikian@mail.house.gov>; Hupp, Millan <hupp.millan@epa.gov>; Duncan, Chris <Chris.Duncan@mail.house.gov>

> Subject: Re: Leader McCarthy Phone Call Request

> The Administrator arrived back later than we thought. I need to connect with him today on this.

> _____
> Ryan Jackson
> Chief of Staff
> U.S. EPA

> Ex. 6 - Personal Privacy

>> On Jun 12, 2017, at 9:35 AM, Hupp, Sydney <hupp.sydney@epa.gov> wrote:
>>

>> Good morning! Following up on this. What number should we call this afternoon?
>>

>> Thanks!
>>

>> Sent from my iPhone

>>
>>> On Jun 8, 2017, at 4:48 PM, Hupp, Sydney <hupp.sydney@epa.gov> wrote:
>>>
>>> Let's do it! Should we call you?
>>>
>>>
>>> _____
>>> Sydney Hupp
>>> Executive Scheduler
>>> Office of the Administrator
>>> Ex. 6 - Personal Privacy (C)
>>>
>>> -----Original Message-----
>>> From: Gourdikian, Alexandra [mailto:Alexandra.Gourdikian@mail.house.gov]
>>> Sent: Thursday, June 8, 2017 5:37 PM
>>> To: Hupp, Sydney <hupp.sydney@epa.gov>; Hupp, Millan <hupp.millan@epa.gov>
>>> Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Duncan, Chris <Chris.Duncan@mail.house.gov>
>>> Subject: RE: Leader McCarthy Phone Call Request
>>>
>>> OK, what about 5:00PM ET? The Leader is in weekly leadership meetings all afternoon on Monday.
>>>
>>> -----Original Message-----
>>> From: Hupp, Sydney [mailto:hupp.sydney@epa.gov]
>>> Sent: Thursday, June 08, 2017 5:36 PM
>>> To: Gourdikian, Alexandra; Hupp, Millan
>>> Cc: Jackson, Ryan; Duncan, Chris
>>> Subject: RE: Leader McCarthy Phone Call Request
>>>
>>> Unfortunately, that one doesn't work on our end. Is there any other availability in the afternoon?
>>>
>>> _____
>>> Sydney Hupp
>>> Executive Scheduler
>>> Office of the Administrator
>>> Ex. 6 - Personal Privacy (C)
>>>
>>> -----Original Message-----
>>> From: Gourdikian, Alexandra [mailto:Alexandra.Gourdikian@mail.house.gov]
>>> Sent: Thursday, June 8, 2017 5:30 PM
>>> To: Hupp, Sydney <hupp.sydney@epa.gov>; Hupp, Millan <hupp.millan@epa.gov>
>>> Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Duncan, Chris <Chris.Duncan@mail.house.gov>
>>> Subject: RE: Leader McCarthy Phone Call Request
>>>
>>> No, unfortunately that does not work for the Leader. What about 9:30AM ET on Monday, June 12?
>>>
>>> -----Original Message-----
>>> From: Hupp, Sydney [mailto:hupp.sydney@epa.gov]
>>> Sent: Thursday, June 08, 2017 5:20 PM
>>> To: Gourdikian, Alexandra; Hupp, Millan
>>> Cc: Jackson, Ryan; Duncan, Chris
>>> Subject: RE: Leader McCarthy Phone Call Request
>>>
>>> Any chance we could make it 2:45EST?
>>>
>>> _____
>>> Sydney Hupp
>>> Executive Scheduler

>>> Office of the Administrator

>>> Ex. 6 - Personal Privacy (c)

>>>

>>> -----Original Message-----

>>> From: Gourdikian, Alexandra [mailto:Alexandra.Gourdikian@mail.house.gov]

>>> Sent: Thursday, June 8, 2017 5:17 PM

>>> To: Hupp, Sydney <hupp.sydney@epa.gov>; Hupp, Millan <hupp.millan@epa.gov>

>>> Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Duncan, Chris <Chris.Duncan@mail.house.gov>

>>> Subject: RE: Leader McCarthy Phone Call Request

>>>

>>> OK, does 2:00PM ET on Monday, June 12 work?

>>>

>>> -----Original Message-----

>>> From: Hupp, Sydney [mailto:hupp.sydney@epa.gov]

>>> Sent: Thursday, June 08, 2017 5:10 PM

>>> To: Gourdikian, Alexandra; Hupp, Millan

>>> Cc: Jackson, Ryan; Duncan, Chris

>>> Subject: RE: Leader McCarthy Phone Call Request

>>>

>>> Hey Alexandra,

>>>

>>> Just talked with Millan and it looks like tomorrow isn't going to work now. So sorry! Can we look at some times for next week?

>>>

>>> Thank you!

>>>

>>>

>>> Sydney Hupp

>>> Executive Scheduler

>>> Office of the Administrator

>>> Ex. 6 - Personal Privacy (c)

>>>

>>> -----Original Message-----

>>> From: Gourdikian, Alexandra [mailto:Alexandra.Gourdikian@mail.house.gov]

>>> Sent: Thursday, June 8, 2017 5:03 PM

>>> To: Hupp, Sydney <hupp.sydney@epa.gov>; Hupp, Millan <hupp.millan@epa.gov>

>>> Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Duncan, Chris <Chris.Duncan@mail.house.gov>

>>> Subject: RE: Leader McCarthy Phone Call Request

>>>

>>> The Leader had a change in schedule tomorrow, June 9 and will now be available at 11:30AM PT/8:30PM ITALY time. Millan, please let me know whether or not this works for Administrator Pruitt. Thanks!

>>>

>>> -----Original Message-----

>>> From: Gourdikian, Alexandra

>>> Sent: Thursday, June 08, 2017 4:44 PM

>>> To: 'Hupp, Sydney'; 'Hupp, Millan'

>>> Cc: 'Jackson, Ryan'; Duncan, Chris

>>> Subject: RE: Leader McCarthy Phone Call Request

>>>

>>> Thank you Sydney. Millan- please confirm when possible. Thanks!

>>>

>>> -----Original Message-----

>>> From: Hupp, Sydney [mailto:hupp.sydney@epa.gov]

>>> Sent: Thursday, June 08, 2017 4:02 PM

>>> To: Gourdikian, Alexandra; Hupp, Millan

>>> Cc: Jackson, Ryan; Duncan, Chris
>>> Subject: RE: Leader McCarthy Phone Call Request
>>>
>>> Hey Alexandra,
>>>
>>> I am not on the ground with them, but from what I know I believe 7PM Italy time works. As of yesterday they were scheduled to have a dinner meeting at 7:30 but 7PM looks clear. I know things can change on the ground pretty quickly but I would plan on calling then unless you hear differently from Millan.
>>>
>>> Thank you!
>>>
>>>
>>> _____
>>> Sydney Hupp
>>> Executive Scheduler
>>> Office of the Administrator
>>> Ex. 6 - Personal Privacy (C)
>>>
>>> -----Original Message-----
>>> From: Gourdikian, Alexandra [mailto:Alexandra.Gourdikian@mail.house.gov]
>>> Sent: Thursday, June 8, 2017 3:52 PM
>>> To: Hupp, Millan <hupp.millan@epa.gov>
>>> Cc: Hupp, Sydney <hupp.sydney@epa.gov>; Jackson, Ryan <jackson.ryan@epa.gov>; Duncan, Chris <Chris.Duncan@mail.house.gov>
>>> Subject: RE: Leader McCarthy Phone Call Request
>>>
>>> Millan- are we able to confirm this call for tomorrow, June 9? Please advise. Thanks!
>>>
>>> -----Original Message-----
>>> From: Gourdikian, Alexandra
>>> Sent: Thursday, June 08, 2017 1:50 PM
>>> To: 'Hupp, Millan'
>>> Cc: 'Hupp, Sydney'; 'Jackson, Ryan'; Duncan, Chris
>>> Subject: RE: Leader McCarthy Phone Call Request
>>> Importance: High
>>>
>>> OK, I think there was a misunderstanding. I have this call on the Leader's calendar for Friday, June 9 at 10AM/7PM ITALY time as I confirmed below. Please let me know if that is possible. Thanks!
>>>
>>> -----Original Message-----
>>> From: Hupp, Millan [mailto:hupp.millan@epa.gov]
>>> Sent: Thursday, June 08, 2017 1:47 PM
>>> To: Gourdikian, Alexandra
>>> Cc: Hupp, Sydney; Jackson, Ryan; Duncan, Chris
>>> Subject: Re: Leader McCarthy Phone Call Request
>>>
>>> Alexandra -- we never received a call from the Leader. I am so sorry but we will have to reschedule for a later date. Thank you!
>>>
>>> Sent from my iPhone
>>>
>>>> On Jun 8, 2017, at 7:02 PM, Gourdikian, Alexandra <Alexandra.Gourdikian@mail.house.gov> wrote:
>>>>
>>>> Thank you!
>>>>

>>>> -----Original Message-----

>>>> From: Hupp, Millan [mailto:hupp.millan@epa.gov]

>>>> Sent: Thursday, June 08, 2017 12:39 PM

>>>> To: Gourdikian, Alexandra

>>>> Cc: Hupp, Sydney; Jackson, Ryan; Duncan, Chris

>>>> Subject: Re: Leader McCarthy Phone Call Request

>>>>

>>>> Alexandra -- if for some reason you all cannot get though to the Administrator, my number is

Ex. 6 - Personal Privacy

>>>>

>>>> Sent from my iPhone

>>>>

>>>>> On Jun 8, 2017, at 4:37 PM, Gourdikian, Alexandra <Alexandra.Gourdikian@mail.house.gov> wrote:

>>>>>

>>>>> Thank you. Topic is RFS and RINs. Thanks!

>>>>>

>>>>> -----Original Message-----

>>>>> From: Hupp, Millan [mailto:hupp.millan@epa.gov]

>>>>> Sent: Wednesday, June 07, 2017 6:26 PM

>>>>> To: Gourdikian, Alexandra

>>>>> Cc: Hupp, Sydney; Jackson, Ryan; Duncan, Chris

>>>>> Subject: Re: Leader McCarthy Phone Call Request

>>>>>

>>>>> Excellent. Thank you so much, Alexandra. The best number will be Ex. 6 - Personal Privacy

>>>>>

>>>>> Sent from my iPhone

>>>>>

>>>>>> On Jun 8, 2017, at 12:08 AM, Gourdikian, Alexandra <Alexandra.Gourdikian@mail.house.gov> wrote:

>>>>>>

>>>>>> Thanks, Millan. We can confirm 10:00AM PT/7:00PM ITALY time on Friday, June 9 on the Leader's calendar. The Leader will call from his cell phone Ex. 6 - Personal Privacy Please provide the best number for the Leader to reach Administrator Pruitt. I will get back to you shortly on topic.

>>>>>>

>>>>>> Also, I am looping in the Leader's District Scheduler, Chris Duncan, since the Leader will be in California.

>>>>>>

>>>>>> Thanks!

>>>>>>

>>>>>> -----Original Message-----

>>>>>> From: Hupp, Millan [mailto:hupp.millan@epa.gov]

>>>>>> Sent: Wednesday, June 07, 2017 5:43 PM

>>>>>> To: Gourdikian, Alexandra

>>>>>> Cc: Hupp, Sydney; Jackson, Ryan

>>>>>> Subject: Re: Leader McCarthy Phone Call Request

>>>>>>

>>>>>> I am so sorry but unfortunately he will be in the middle of a dinner at that time. I will go ahead and schedule the 10AM PT/7PM Italy on Thursday, June 8 if that still works on your end?

>>>>>>

>>>>>> Could we please arrange for Leader McCarthy to call the Administrator as dialing out has been a little tricky for us? At your convenience, kindly let me know what number he will use.

>>>>>>

>>>>>> May I offer the Administrator an idea of the topic that Leader McCarthy would like to discuss?

>>>>>>

>>>>>> Thank you,

>>>>>> Millan
>>>>>>
>>>>>> Sent from my iPhone
>>>>>>
>>>>>>> On Jun 7, 2017, at 11:28 PM, Gourdikian, Alexandra <Alexandra.Gourdikian@mail.house.gov> wrote:
>>>>>>>
>>>>>>> Friday, June 9.
>>>>>>>
>>>>>>> -----Original Message-----
>>>>>>> From: Hupp, Millan [mailto:hupp.millan@epa.gov]
>>>>>>> Sent: Wednesday, June 07, 2017 4:43 PM
>>>>>>> To: Gourdikian, Alexandra
>>>>>>> Cc: Hupp, Sydney; Jackson, Ryan
>>>>>>> Subject: Re: Leader McCarthy Phone Call Request
>>>>>>>
>>>>>>> Alexandra,
>>>>>>>
>>>>>>> Would that 11AM PT be on Thursday or Friday?
>>>>>>>
>>>>>>> Thank you,
>>>>>>> Millan

>>>>>>>
>>>>>>> Sent from my iPhone
>>>>>>>
>>>>>>>> On Jun 7, 2017, at 8:18 PM, Gourdikian, Alexandra <Alexandra.Gourdikian@mail.house.gov> wrote:
>>>>>>>>
>>>>>>>> Thanks, Millan.
>>>>>>>>
>>>>>>>>> The Leader will be in his district in California on Friday. Any chance we could do the call at 11:00AM PT/8:00PM Italy time? If not, we'll take 10AM PT/1PM ET/7PM Italy time. Thanks!
>>>>>>>>>
>>>>>>>>>
>>>>>>>>> Alexandra Gourdikian
>>>>>>>>> Scheduler
>>>>>>>>> Majority Leader Kevin McCarthy
>>>>>>>>> Phone: (202) 225-4000
>>>>>>>>>
>>>>>>>>>
>>>>>>>>>
>>>>>>>>> -----Original Message-----
>>>>>>>>> From: Hupp, Millan [mailto:hupp.millan@epa.gov]
>>>>>>>>> Sent: Wednesday, June 07, 2017 10:52 AM
>>>>>>>>> To: Gourdikian, Alexandra
>>>>>>>>> Cc: Hupp, Sydney; Jackson, Ryan
>>>>>>>>> Subject: Re: Leader McCarthy Phone Call Request
>>>>>>>>>
>>>>>>>>> Sydney and Alexandra,
>>>>>>>>>
>>>>>>>>>> Italy is 6 hours ahead of D.C. so we could do one of the following...
>>>>>>>>>>
>>>>>>>>>>> 1PM EDT/7PM Italy on Thursday, June 8
>>>>>>>>>>>

>>>>>>> or
>>>>>>>
>>>>>>> 12PM EDT/6PM Italy on Friday, June 9
>>>>>>>
>>>>>>> Thank you,
>>>>>>> Millan
>>>>>>>
>>>>>>> Sent from my iPhone
>>>>>>>
>>>>>>> On Jun 7, 2017, at 4:20 PM, Gourdikian, Alexandra
<Alexandra.Gourdikian@mail.house.gov> wrote:
>>>>>>>
>>>>>>> Thank you all. Friday would work well if that's an option. Thanks!
>>>>>>>
>>>>>>> -----Original Message-----
>>>>>>> From: Hupp, Sydney [mailto:hupp.sydney@epa.gov]
>>>>>>> Sent: Wednesday, June 07, 2017 10:10 AM
>>>>>>> To: Gourdikian, Alexandra
>>>>>>> Cc: Jackson, Ryan; Hupp, Millan
>>>>>>> Subject: RE: Leader McCarthy Phone Call Request
>>>>>>>
>>>>>>> Hi Alexandra,
>>>>>>>
>>>>>>> The Administrator is traveling to Italy today so this could be slightly tricky. I am looping in our
Advance point who is handling his schedule once he is on the ground in Italy as well as our Chief of Staff
for his awareness. Millan, can we find 15 minutes in the next few days for the Administrator and Leader
McCarthy to speak on the phone?
>>>>>>>
>>>>>>> Thank you!
>>>>>>>
>>>>>>>
>>>>>>> _____
>>>>>>> Sydney Hupp
>>>>>>> Executive Scheduler
>>>>>>> Office of the Administrator
>>>>>>> Ex. 6 - Personal Privacy (C)
>>>>>>>
>>>>>>> -----Original Message-----
>>>>>>> From: Hale, Michelle
>>>>>>> Sent: Tuesday, June 6, 2017 7:23 PM
>>>>>>> To: Gourdikian, Alexandra <Alexandra.Gourdikian@mail.house.gov>
>>>>>>> Cc: Hupp, Sydney <hupp.sydney@epa.gov>
>>>>>>> Subject: Re: Leader McCarthy Phone Call Request
>>>>>>>
>>>>>>>
>>>>>>> Copying our scheduler to check!
>>>>>>> Sent from my iPhone
>>>>>>>
>>>>>>> On Jun 6, 2017, at 6:57 PM, Gourdikian, Alexandra
<Alexandra.Gourdikian@mail.house.gov> wrote:
>>>>>>>
>>>>>>> Hi Michelle- Leader McCarthy would to like speak with Administrator Pruitt sometime this
week if possible. Does the Administrator have time for a 15 minute phone call tomorrow, June 7 or
Thursday, June 8? Thanks!
>>>>>>>
>>>>>>> Alexandra Gourdikian
>>>>>>> Scheduler

>>>>>>>>> Majority Leader Kevin McCarthy
>>>>>>>>> 202-225-4000
>>>>>>>>>
>>>>>>>>> Sent from my iPhone

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Maxwell, Josh
Sent: Mon 6/5/2017 8:52:34 PM
Subject: contact

Jeff Sands — **Ex. 6 - Personal Privacy**

jeffrey.sands@syngenta.com

Ex. 6 - Personal Privacy

Josh Maxwell

Senior Professional Staff | House Agriculture Committee

Chairman K. Michael Conaway (TX-11)

1301 Longworth House Office Building | Washington, DC 20515

(202) 225-7456



To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Yamada, Richard
Sent: Mon 6/5/2017 3:08:22 PM
Subject: RE:

Thanks Ryan - I just had the background investigation interview.

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Thanks again for all your help in this process, can't wait until next Monday!

Richard

Richard Yamada

Professional Staff Member | Committee on Science, Space, and Technology
U.S. House of Representatives | 2319 Rayburn House Office Building
Washington DC, 20515

<http://science.house.gov/>
202-225-6371 (office)
202-226-0113 (fax)

-----Original Message-----

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Monday, June 5, 2017 9:23 AM
To: Yamada, Richard <Richard.Yamada@mail.house.gov>
Subject:

Glad everything has come together. Looking forward to having you here.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Gray, Jonathan
Sent: Sun 6/4/2017 7:13:19 PM
Subject: Re:

Yes, just tried giving you a call. Feel free to call or text me. **Ex. 6 - Personal Privacy**

Sent from my iPhone

> On Jun 4, 2017, at 2:34 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

>

> Do you have a moment to talk?

>

>

> _____
> Ryan Jackson

> Chief of Staff

> U.S. EPA

> **Ex. 6 - Personal Privacy**

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Pfrang, Steve
Sent: Fri 6/2/2017 7:36:36 PM
Subject: Rep. LaHood Constituent Meeting Request
[Letter to LaHood for Doug Brown.pdf](#)

Hey Ryan –

Hope all is well with you! Attached is a meeting request from the Chief Utility Engineer in Springfield, IL (in our district) who is going to be in DC June 14-16 and would like to meet with someone on your team regarding some water quality protection issues. His letter to Darin with the meeting request is attached to this email. Is there any chance someone on your team might be able to meet with him during one of the time slots he's available? Contact info for the Springfield, IL Chamber is included in the attached document, it can be run through them or I'm obviously happy to help as well.

Thanks for considering Ryan! Talk soon I'm sure –

Regards,

Steve

Steven Pfrang

Chief of Staff

Rep. Darin LaHood (IL-18)

202.226.0133

To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Fri 6/2/2017 6:11:51 PM
Subject: ****Media Advisory**** An Overview of the National Aeronautics and Space Administration Budget for Fiscal Year 2018



For Planning Purposes | June 2, 2017

Media Contacts: [Kristina Baum](#), [Thea McDonald](#)

****Media Advisory****

An Overview of the National Aeronautics and Space Administration Budget for Fiscal Year 2018

WASHINGTON – **THURSDAY, June 8, at 10:00 a.m. EST**, the Committee on Science, Space, and Technology's Subcommittee on Space will hold a hearing titled *An Overview of the National Aeronautics and Space Administration Budget for Fiscal Year 2018*. The purpose of the hearing is to review the administration's fiscal year 2018 (FY18) budget request for the National Aeronautics and Space Administration (NASA).

WHAT: Hearing on *An Overview of the National Aeronautics and Space Administration Budget for Fiscal Year 2018*

WHEN: THURSDAY, June 8, at 10:00 a.m.

WHERE: 2318 Rayburn House Office Building

-

Witness List

- ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ **Mr. Robert M. Lightfoot, Jr.**, acting administrator, National Aeronautics and Space Administration (NASA)

Live streaming will be available on the committee's [website](#) and [YouTube](#).

###

www.science.house.gov



To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Thur 6/1/2017 7:42:14 PM
Subject: Smith Statement on U.S. Withdrawal from Paris Climate Agreement



For Immediate Release | June 1, 2017

Media Contacts: [Kristina Baum](#), [Thea McDonald](#)

Smith Statement on U.S. Withdrawal from Paris Climate Agreement

WASHINGTON - U.S. House Science, Space, and Technology Committee Chairman Lamar Smith (R-Texas) released the following statement today after President Trump announced the United States' withdrawal from the Paris climate agreement.

Chairman Smith: “By withdrawing from the Paris climate agreement, President Trump has freed America from a bad deal that would cost billions of dollars but have little significant environmental benefit. Former President Obama bypassed Congress when he agreed to the deal, putting our nation at an economic disadvantage and imposing huge burdens on American families and businesses. President Trump’s decision will allow America to move forward with policies based on sound science and smart cost-benefit analyses to ensure Americans don’t bear the brunt of the all-pain, no-gain policies of the previous administration.”

Background

- On Nov. 4, 2016, Chairman Smith released a statement after the Paris climate agreement went into effect.
- On Sept. 22, 2016, Chairman Smith released a statement after more than 20 nations formally agreed to the Paris climate deal.
- April 22, 2016: Smith: The President's Climate-Change Agenda Will Cost American Families (National Review, Opinion)
- On Feb. 2, 2016, the Science Committee held a hearing titled *Paris Climate Promise: A Bad Deal for America*. The hearing examined the various scientific, economic, and other policy issues surrounding President Obama's pledge to the Paris agreement.
- Jan. 7, 2016: Smith: Climate exaggeration (Washington Examiner, Opinion)
- Dec. 13, 2015: Rep. Lamar Smith: Don't rely on bad climate deal (USA Today, Opinion)
- On Dec. 12, 2015, Chairman Smith issued a statement in response to President Obama's agreement to the climate deal.
- On Dec. 1, 2015, the Science Committee held a hearing titled *Pitfalls of Unilateral Negotiations at the Paris Climate Change Conference*.

- On Nov. 18, 2015, Chairman Smith delivered this opening statement at a hearing titled *The Administration's Empty Promises for the International Climate Treaty*.

- On April 15, 2015, the Science Committee held a hearing to examine the scientific justification for President Obama's recently submitted climate pledge to the United Nations.

- On March 31, 2015, Chairman Smith released a statement after the Obama administration submitted its climate change strategy to the United Nations.

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www.science.house.gov



To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Thur 6/8/2017 9:11:00 PM
Subject: SST Committee Approves the American Space Commerce Free Enterprise Act of 2017



For Immediate Release | June 8, 2017

Media Contacts: [Kristina Baum](#), [Thea McDonald](#)

SST Committee Approves the *American Space Commerce Free Enterprise Act of 2017*

WASHINGTON - The U.S. House Committee on Science, Space, and Technology today unanimously approved H.R. 2809, the *American Space Commerce Free Enterprise Act of 2017*, as the bill now moves to the full U.S. House of Representatives for consideration. Chairman Lamar Smith (R-Texas), Space Subcommittee Chairman Babin (R-Texas), Rep. Jim Bridenstine (R-Okla.), and House Majority Leader Kevin McCarthy (R-Calif.) praised the bill's passage:

Chairman Smith: "The United States space enterprise is positioned to take the lead in commercial space exploration as this historic bill moves forward to the House for consideration. Today's committee vote signals our commitment to complying with our international obligations, reforming our commercial remote sensing system, and welcoming new space operators. With committee approval of the American Space Commerce Free Enterprise Act, we are one step closer to implementing an innovative,

transparent, and streamlined structure for authorizing and supervising space activity while imposing minimal burdens on stakeholders. I appreciate the support from my colleagues on both sides of the aisle, and I look forward to working hand and hand with leadership to bring this to a House floor vote.”

Space Subcommittee Chairman Babin: “The American Space Commerce Free Enterprise Act is a common-sense bipartisan bill that streamlines regulatory processes, limits burdensome government intrusion, promotes American innovation and investment, protects national security, and satisfies our international obligations. For several years, we have heard concerns from stakeholders that they need greater regulatory certainty to attract investment and succeed. I am pleased that the Committee has acted to address these concerns by passing this much-needed bill.”

Rep. Bridenstine: “The American Space Commerce Free Enterprise Act provides certainty to industry by creating a clear, transparent, and minimally burdensome process for commercial space activities. It also reforms the broken system of remote sensing licensing that is overly restrictive, thwarts industry, and hands an advantage to foreign competitors.”

Leader McCarthy: “The future of space exploration is now and the commercial space industry has a vital role to play. Our current regulatory regime discourages private sector investment in the commercial space industry, which threatens the industry’s development and global standing. In order to ensure America’s commercial space industry maintains its competitiveness, we need to create a pro-growth environment through regulatory certainty and this legislation continues our recent work to do just that.”

Background

The *American Space Commerce Free Enterprise Act of 2017* simplifies and strengthens the outdated space-based remote sensing regulatory system. At the same time, this bill enhances U.S. compliance with international obligations, improves national security and removes regulatory barriers facing new and innovative space companies.

This bill will:

- Create a single authority for U.S. authorization and supervision of nongovernmental space activities located at the Department of Commerce Office of Space Commerce
- Establish a transparent certification process in the least burdensome manner possible
- Provide greater certainty to assure nongovernmental space activities conform to the United States' Outer Space Treaty obligations
- Address concerns that certified activities may pose a safety risk to existing federal government space systems
- Reform the space-based remote sensing regulatory process
- Preserve ability to condition remote sensing operations to protect national security
- Enhance national security by ensuring insight into operations and capabilities by creating a competitive environment that discourages offshoring

The *American Space Commerce Free Enterprise Act of 2017* was first introduced on June 7, by Chairman Smith along with Reps. Babin and Bridenstine.

Cosponsors of this legislation include: Rep. Ed Perlmutter (D-Colo.), Rep. Dana Rohrabacher (R-Calif.), Rep. Randy Hultgren (R-Ill.), Rep. Randy Weber (R-Texas), Rep. Clay Higgins (R-La.), and Rep. Derek Kilmer (D-Wash.).

Text of the bill can be found [here](#).

List of growing support for the bill can be found [here](#).

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www.science.house.gov



To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Thur 6/8/2017 8:52:47 PM
Subject: Support Grows for the American Space Commerce Free Enterprise Act of 2017



For Immediate Release | June 8, 2017

Media Contact: [Kristina Baum](#), [Thea McDonald](#)

Support Grows for the *American Space Commerce Free Enterprise Act of 2017*

WASHINGTON - The U.S. House of Representatives Committee on Science, Space, and Technology announced growing support for H.R. 2809, the "[*American Space Commerce Free Enterprise Act of 2017*](#)." The legislation was favorably reported out of committee today by voice vote. Keep reading to see what they're saying.

"Quietly, for many years, a debate has taken place in government and commercial space policy circles about the proper legal structure for handling actions by U.S. entities that take place far from Earth. The American Space Commerce Free Enterprise Act of 2017 brilliantly resolves some of the contradictions inherent in more traditional models and proposes a new and, in my opinion, very effective legal structure for future activities." – **Jeff Greason, CEO, Agile Aero**

“The Act has a number of important provisions, including simplifying and strengthening the outdated space-based remote sensing regulatory system. The Act will also enhance U.S. compliance with international obligations, improve national security, and eliminate cumbersome regulatory barriers facing new and innovative space technology companies.” – **Guy P. Seeley, Ph.D., president, Atmospheric and Environmental Research**

“The Act has a number of important provisions, most important is that the proposed legislation will simplify and strengthen the outdated space-based remote sensing regulatory system.” – **Geoff Crowley, Ph.D., president & chief scientist, Atmospheric & Space Technology Research Associates (ASTRA) LLC**

“As a company who envisions a purely commercial business model, requesting no government funding and no guarantee of a government anchor tenant, we rely heavily on outside investment. Investors are, in turn, very focused on understanding risk, which includes knowing the impact of government-imposed regulation. For this reason, Axiom Space is fully supportive of the intent of the Act – to maximize certainty while minimizing the regulatory burden placed on new and innovative space companies.” – **Michael Suffredini, president and CEO, Axiom Space, LLC**

“Bigelow Aerospace strongly endorses the core principles of the ASCFEA to ensure a regulatory ‘light touch’ approach that enables technological innovation and also helps promote safe operations in space under an authorization schema though the registration of space objects. I applaud the committee working tirelessly on a bipartisan approach that upholds and enhances American leadership in space as well as lays the foundation for commercial space activities grow and flourish.” – **Christopher M. Hearsey, director of legislative affairs, Bigelow Aerospace, LLC**

“ The member companies and institutions of the Commercial Spaceflight Federation are in strong agreement with all of the goals and most of the key elements of your legislation: significant reform of the Commerce Department’s obsolete, burdensome, and dysfunctional regime for licensing commercial remote sensing satellites is especially welcome.” – **Eric Stallmer, president, Commercial Spaceflight Federation**

“We support the creation of a single authority for the registration of nongovernmental space activities located at the Department of Commerce Office of Space Commerce; as

well as, maintaining our international obligations to the Outer Space Treaty and recognizing any safety risks posed to our existing federal space systems.” – Dr. Devrie S. Intriligator, director, Space Plasma Laboratory, Carmel Research Center, Inc.

“Under the proposed legislation, the space-based remote sensing regulatory system would undergo regularization and simplification, which is of particular importance to companies like ours that plan to develop new commercial remote sensing capabilities and seek a predictable regulatory regime for such activities. The Act would also ensure U.S. compliance with international obligations, promote evidence-based regulation, improve national security and eliminate cumbersome regulatory barriers facing new and innovative space technology companies.” – Conrad C. Lautenbacher, Jr., VADM USN (ret.) and CEO, GeoOptics

“As the first U.S. company to request and receive U.S. governmental ‘mission approval’ to send a private robotic spacecraft beyond traditional Earth orbit and to the Moon, we can attest to the need for certainty of process within a framework of minimal regulatory burden... This legislation creates a clear, objective, transparent, timely and appealable process for American companies like Moon Express to pursue innovative commercial space activities beyond traditional Earth orbit.” – Dr. Robert Richards, founder, president & CEO, Moon Express Inc.

“Panasonic is in strong support of the bi-partisan efforts in the development of this bill, and we support efforts to bring it before the House of Representatives as soon as possible.” – Neil Jacobs, Panasonic

“SIA strongly supports these goals addressed in the draft legislation; we applaud the sponsors of this bill and the Committee’s leadership for their efforts to date to advance reform of the commercial remote sensing regulatory regime. SIA believes that introducing greater transparency and discipline into the U.S. Government’s regulatory review processes will ultimately encourage industry growth and bring a multitude of benefits to the U.S. economy and security.” – Tom Stroup, president, Satellite Industry Association

“This legislation makes clear that the Committee has given thought to a long view of how to best enable American industry and entrepreneurs to pursue space commerce activities aimed at exploring, developing, and utilizing space resources.” – Jim Ball,

president, Spaceport Strategies LLC

“The Act has a number of important provisions... the Act will enhance U.S. compliance with international obligations, will serve to improve national security and eliminates cumbersome regulatory barriers facing new and innovative space technology companies.” – **W. Kent Tobiska, president, Space Environment Technologies**

“Given that enabling both space development and space settlement are vital to the strategic future of the United States, we need a solution that ensures we will not only continue to meet our obligations under the Outer Space Treaty, but also encourages and enables new non-governmental space activities to be pursued. Therefore, we are glad to see long-standing issues related to commercial remote sensing licenses are being addressed, and that a transparent, timely, and appealable regulatory process would be available for new non-traditional space activities upon passage of this bill.” – **Andrew Newman, chairman, Students for the Exploration and Development of Space; Josh Guild, interim executive director, Space Frontier Foundation**

“It is so important that rules and regulations support and not hinder industry’s ability to grow and innovate. We believe this bill will do just that by presuming approval, redefining what needs to be regulated, streamlining the permitting process with actionable deadlines, increasing transparency and establishing an Assistant Secretary of Space Commerce.” – **Jonathan Rosenblatt, general counsel, Spire Global, Inc.; Robbie Schingler, co-founder & chief strategy officer, Planet Labs, Inc. ; Marcy Steinke, senior vice president, government relations & public policy, DigitalGlobe, Inc.**

“This legislation clearly reflects the Committee’s continued bipartisan support for America’s commercial space industry.” – **Stu Witt, Witt & Associates**

Letters of support for the *American Space Commerce Free Enterprise Act of 2017* can be found here:

[AgileAero, Inc.](#)

Atmospheric and Environmental Research

Atmospheric & Space Technology Research Associates, LLC

Axiom Space, LLC

Bigelow Aerospace, LLC

Carmel Research Center, Inc.

GeoOptics

Moon Express Inc.

Panasonic

Satellite Industry Association

Spaceport Strategies, LLC

Space Environment Technologies

Space Frontier Foundation and Students for the Exploration and Development of Space

Spire Global, Inc., Planet Labs, Inc., and Digital Globe, Inc.

The Commercial Spaceflight Federation

Witt & Associates

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To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Thur 6/8/2017 8:24:56 PM
Subject: **Media Advisory** Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry



For Planning Purposes | June 8, 2017

Media Contacts: [Kristina Baum](#), [Thea McDonald](#)

****Media Advisory****

Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry

WASHINGTON – **THURSDAY, June 15, at 10:00 a.m. EDT**, the Subcommittee on Oversight and the Subcommittee on Research and Technology of the Committee on Science, Space, and Technology will hold a hearing titled *Bolstering the Government's Cybersecurity: Lessons Learned from WannaCry*. The purpose of the hearing is to examine the recent WannaCry ransomware attack that compromised computer systems globally last month, and it will allow the committee to hear recommendations for what the government can do to ensure its systems are protected against similar and possibly more sophisticated attacks. The hearing will also examine the benefits of public-private partnerships for cybersecurity, as well as the president's recent executive order, which makes the National Institute of Standards and Technology's (NIST) Cybersecurity Framework mandatory for executive branch departments and agencies.

WHAT: Hearing on *Bolstering the Government's Cybersecurity: Lessons*

Learned from WannaCry

WHEN: THURSDAY, June 15, at 10:00 a.m. EDT

WHERE: 2318 Rayburn House Office Building

-

Witness List

- **Mr. Salim Neino**, chief executive officer, Kryptos Logic
- **Dr. Charles H. Romine**, director, Information Technology Laboratory, National Institute of Standards and Technology
- **Mr. Gregory J. Touhill**, CISSP, CISM; brigadier general, USAF (ret); adjunct professor, Cybersecurity & Risk Management, Carnegie Mellon University, Heinz College
- **Dr. Hugh Thompson**, chief technology officer, Symantec

Live streaming will be available on the committee's [website](#) and [YouTube](#).

###

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To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Thur 6/8/2017 5:58:18 PM
Subject: Rep. Bridenstine Opening Statement: H.R. 2809



For Immediate Release | June 8, 2017

Media Contact: [Kristina Baum](#), [Thea McDonald](#)

Rep. Bridenstine Opening Statement for Markup of *H.R. 2809, the “American Space Commerce Free Enterprise Act of 2017”*

WASHINGTON - U.S. Rep. Jim Bridenstine (R-Okla.) delivered the following opening statement today at the full committee markup of H.R. 2809, the *American Space Commerce Free Enterprise Act of 2017*.

As prepared for delivery:

Mr. Chairman, I am glad we are here today marking up the American Space Commerce Free Enterprise Act. For several years now, there has been uncertainty around what government agency has the responsibility to approve nontraditional space activities while ensuring conformity with the Outer Space Treaty. This uncertainty has hurt capital formation and innovation. It also sends American companies scrambling overseas to countries such as Luxembourg or the UAE. This is the exact opposite environment we need in this country.

I have made solving this issue one of my top priorities in Congress. Last year, I proposed legislation to provide for an Enhanced Payload Review. The American

Space Commerce Free Enterprise Act takes from that and builds upon much of the consensus we gained around the policies in that draft legislation.

The American Space Commerce Free Enterprise Act provides certainty to industry by granting the ability to approve commercial space activities to a single authority, in this case the Secretary of Commerce. The Office of Space Commerce will be elevated to a more prominent position within the Commerce Department and will perform a simple review of proposed operations to check that they are not violating the United States' obligations under the Outer Space Treaty. This gives the executive branch the tool it claims needs while instituting a clear, known, transparent, and timely process for American industry to prosper.

There is discretion built into this bill for the Secretary to condition or deny a certification. I think this is important to have from a policy standpoint, however, the onus to prove there is a problem is now on the government. The message Congress is trying to send is: America is open for business in space.

However, Congress also recognizes that there are other policies and interests of the United States that are affected by private sector space activities, one of them being national security. As a former Naval aviator, current Oklahoma Air National Guardsman, and member of the House Armed Services Committee, there is nothing more important to me than the national security of the United States. This bill improves national security.

This is why the American Space Commerce Free Enterprise Act rolls in remote sensing reform. National security interests – for the foreseeable future – will be implicated by remote sensing systems, both of the Earth and objects in orbit. By requiring a national security risk assessment during the remote sensing system permitting process, we are ensuring national security concerns are met.

This has also provided an opportunity in this bill for us to majorly reform the broken system of remote sensing licensing that is overly restrictive, thwarts industry, and hands an advantage to foreign competitors. As the author of Title II of the Commercial Space Launch Competitiveness Act of 2015, along with my good friend from Colorado Ed Perlmutter, I have been committed to fixing this issue.

The American Space Commerce Free Enterprise Act improves the remote sensing permitting process by creating a single decision point, increasing transparency of the process, avoiding unnecessary reviews of technologies available on the market or that have already been approved, and preventing the interagency process from indefinitely delaying decision making.

These changes will allow our remote sensing industry to once again be the world leader.

The bill also goes farther than current law to provide for the physical safety of United States government assets on orbit. After operations are certificated, the government can do an assessment for physical safety issues, and a consultation forum will be held to come to a solution that can prevent any disastrous collisions and protect the safety of government and private assets.

This bill will engender a growth in commercial space activity that we have not yet seen. A good growth. But this growth will continue to put further stress on the agency responsible for approving launches – FAA/AST. Congress needs to be mindful that we must be proactive on that office as well, and I will have an amendment to begin addressing this issue later in the mark up.

All in all Mr. Chairman, this is a very strong and bipartisan bill, which was very important for me that we make sure this bill, and space, remained bipartisan. This is a good place to begin the legislative process as we work with the rest of our House colleagues, the Senate, and the Administration to eventually get a solution put into law.

I want to thank Chairman Smith and Chairman Babin for working with me on this, we have been working hand in hand to craft the American Space Commerce Free Enterprise Act, and we are sending a clear message that American innovation will lead the world. I am proud to support the bill and look forward to favorably reporting it out of the Science Committee.

I'd like to thank the staff for their work on this issue: my staffer Christopher Ingraham, and Science Committee staffers Chris Wydler, Tom Hammond, Mike Mineiro, and Shana Dale.

I yield back.

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To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Thur 6/8/2017 5:53:33 PM
Subject: Chairman Babin Opening Statement: H.R. 2809



For Immediate Release | June 8, 2017

Media Contact: [Kristina Baum](#), [Thea McDonald](#)

Chairman Babin Opening Statement for Markup of *H.R. 2809, the “American Space Commerce Free Enterprise Act of 2017”*

WASHINGTON - U.S. Rep. Brian Babin (R-Texas), chairman of the U.S. House Science, Space, and Technology Committee’s Subcommittee on Space, delivered the following statement today at the full committee markup of H.R. 2809, the *American Space Commerce Free Enterprise Act of 2017*.

As prepared for delivery:

Good afternoon. I strongly support H.R. 2809, the American Space Commerce Free Enterprise Act of 2017.

I am grateful to have worked with Chairman Smith and Representative Bridenstine in the development of this bill. I am also very glad that this is a bipartisan bill, with the support of Representatives Perlmutter and Kilmer.

The *American Space Commerce Free Enterprise Act* is a common-sense bipartisan bill that streamlines regulatory processes, limits burdensome

government intrusion, promotes American innovation and investment, protects national security, and satisfies our international obligations.

One of the fundamental drivers for this legislation has been that innovative American companies are pushing the boundaries.

When the Senate ratified the *Outer Space Treaty* fifty years ago, free enterprise in outer space was an idea, but not yet a reality.

Today, not only does U.S. free enterprise exist in outer space, it is innovating at an unprecedented pace. From asteroid mining, to private moon missions, to satellite servicing, to remote sensing constellations, there is great promise that American enterprise will soon unlock new wealth and scientific benefits.

But this promise is threatened. Threatened by expansive unchecked regulatory authority, cumbersome non-transparent regulatory processes, and misperceptions about United States Outer Space Treaty obligations.

For several years, the Space Subcommittee has heard concerns from stakeholders that they need greater regulatory certainty to attract investment and succeed. Stakeholders also reported that while they want to stay in America, due to regulatory burdens and uncertainty, they might need to go overseas.

The American Space Commerce Free Enterprise Act addresses these concerns without compromising our cherished principles of liberty.

It provides for presumptions of approval and requires the government to take affirmative steps before conditioning or denying proposed space or remote sensing operations.

It places the burden of demonstrating inconsistency with Outer Space Treaty obligations and national security requirements of the United States with the government, not the applicant.

It curtails vague, overreaching regulatory authority and prevents tolling of statutory adjudication timelines. It ensures U.S. industry receives a timely and transparent determination on applications.

The bill recognizes legitimate national security equities and provides for the condition or denial of authorized space activities with remote sensing systems that are a significant threat to U.S. national security in certain circumstances. But it protects against abuses of interagency discretion by requiring an explanation and evidence of the threat before conditions or denial can be made.

In order to ensure the Office of Space Commerce is empowered to represent the interests of our citizens and the private sector, the Director of the Office is

elevated to be the “Assistant Secretary for Space Commerce.”

The Act also advances important public policy interests.

The bill establishes a mandatory safety consultation between private and federal government operators. The goal of this consultation is for the affected parties to reach a voluntary agreement to mitigate safety risks.

For parties subject to U.S. jurisdiction, the Act provides for Federal district court jurisdiction for any civil action resulting from certified or permitted space operations. To protect against foreign harmful interference, the Act directs the President to protect against acts of foreign aggression and foreign harmful interference.

The act also addresses concerns of harmful contamination of the Earth or celestial bodies. Pursuant to our international obligations under the Outer Space Treaty, operations may be conditioned or denied by the Secretary of Commerce, in consultation with appropriate agencies, such as NASA to address harmful contamination. The bill posits long-standing United States policy, confirmed by both Department of State and NASA, that COSPAR planetary protection guidelines are not international obligations of the United States. This was done to allow all stakeholders, including the scientific community and industry, to work together as activities expand beyond scientific exploration and use, to address mutual interests. Not by proscribing COSPAR guidelines as binding international law, but by allowing the Outer Space Treaty to guide our activities.

I strongly support this bill and urge my colleagues to do the same.

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To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Thur 6/8/2017 5:41:51 PM
Subject: Chairman Smith Opening Statement: H.R. 2809



For Immediate Release | June 8, 2017

Media Contact: [Kristina Baum](#), [Thea McDonald](#)

Chairman Smith Opening Statement for Markup of *H.R. 2809, the “American Space Commerce Free Enterprise Act of 2017”*

WASHINGTON - U.S. Rep. Lamar Smith (R-Texas), chairman of the U.S. House Science, Space, and Technology Committee, delivered the following opening statement today at the full committee markup of H.R. 2809, the *American Space Commerce Free Enterprise Act of 2017*.

As prepared for delivery:

Good afternoon. Today we mark-up H.R. 2809, the *American Space Commerce Free Enterprise Act of 2017*.

H.R. 2809 establishes a legal and policy environment intended to unleash American free enterprise and business, assure conformity with Outer Space Treaty obligations, and ensure that the United States will lead the world in commercial space activities throughout the 21st century.

This bill will promote investment and innovation, resulting in the creation of new

high paying and high value jobs across the country.

It will increase American competitiveness and attract companies, talent, and money that otherwise would have gone to other countries. It ensures America and its workforce will benefit from the new space economy.

The problem this bill seeks to address is the kind of legal uncertainty that arose after Bigelow Aerospace and Moon Express sought payload approval from the Department of Transportation for its non-traditional space activities.

The payload review and approval process is meant to prevent launches of payloads that jeopardize American interests and safety. It is not designed to satisfy the State Department's concerns about complying with Article VI of the Outer Space Treaty.

Under the Treaty, signatories are to authorize and provide continuing supervision of their country's non-governmental space activities. In the case of Bigelow and Moon Express, the Executive Branch stated that it would not be able to assure the public that new and innovative space activities would be approved for launch in the future.

The goal of this bill is not to regulate space broadly or to address all of the possible future challenges that the private sector will face in outer space. Doing so would be premature and likely stifle innovation and investment.

Instead, the bill takes a common sense approach by establishing a legal foundation upon which U.S. industry can flourish.

It establishes a transparent U.S. authorization and supervision certification process for non-governmental space activities that provides regulatory certainty for the U.S. commercial space sector. It assures compliance with United States Outer Space treaty obligations and addresses national security concerns in the least burdensome manner possible.

The bill includes a provision that consolidates at the Department of Commerce's Office of Space Commerce existing regulatory authority spread across three different federal agencies. America gets a "one-stop shop" for authorizing activities that will take place in outer space.

It also streamlines remote sensing regulations to ensure that United States national security is addressed not by holding America's space industry back, but by empowering it to lead the world.

Absent this bill, American industry would continue to face legal uncertainty. Innovation would be subject to a burdensome and open-ended regulatory process, with no assurance of Outer Space Treaty compliance.

An initial draft of the legislation before us now was publicly presented over a month ago for any and all input. We have spent the past month meeting, listening, and considering specific, detailed comments from outside stakeholders, interested federal agencies, the Administration, and our Committee colleagues including those from the minority side of this Committee. Many if not most of their recommendations and requested changes have been included.

Over the past few days, we have received letters and statements of support for the bill from the following entities:

AgileAero, Inc.

Atmospheric and Environmental Research

Atmospheric & Space Technology Research

Axiom Space, LLC

Bigelow Aerospace, LLC

Blue Origin

Carmel Research Center, Inc.

The Commercial Spaceflight Federation

Digital Globe, Inc.

GeoOptics

Moon Express Inc.

Panasonic

Planet Labs, Inc.

Satellite Industry Association

Space Frontier Foundation

Spaceport Strategies, LLC

Spire Global, Inc.

Space Environment Technologies

SpaceX

Students for the Exploration and Development of Space, and TechFreedom

Without objection, the letters we have received will be included in the record. I want to thank these groups for their support of the bill.

Space Subcommittee Chairman Brian Babin and Representative Jim Bridenstine are co-authors and original co-sponsors of the bill. They both have worked diligently for several years to advance this legislation.

I'm glad to have Representative Perlmutter and former Science Committee member Derek Kilmer as original co-sponsors as well. It speaks to the hard work of all Committee members and staff in developing this common sense, bipartisan, regulatory reform bill.

This transformative groundbreaking legislation declares in word and intent that America is "open for business" in space. I strongly recommend this bill and urge my colleagues to support it.

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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Pawlowski, Michael (Murkowski)
Sent: Thur 6/8/2017 4:41:20 PM
Subject: RE: Want to follow up on EPA Region 10

Thanks Ryan - how did things go with Chris?

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Thursday, June 8, 2017 12:25 PM
To: Pawlowski, Michael (Murkowski) <Michael_Pawlowski@murkowski.senate.gov>
Subject: Re: Want to follow up on EPA Region 10

I'm in Italy. But any calls to the WH to move it along is appreciated.

Ryan Jackson

Chief of Staff

U.S. EPA

Ex. 6 - Personal Privacy

On Jun 8, 2017, at 11:59 AM, Pawlowski, Michael (Murkowski)
<Michael_Pawlowski@murkowski.senate.gov> wrote:

Can you and I get a call on this today or tomorrow?

To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Thur 6/8/2017 2:15:28 PM
Subject: Chairman Smith Opening Statement- An Overview of the National Aeronautics and Space Administration Budget for Fiscal Year 2018



For Immediate Release | June 8, 2017

Media Contact: [Kristina Baum](#), [Thea McDonald](#)

Chairman Smith Opening Statement

An Overview of the National Aeronautics and Space Administration Budget for Fiscal Year 2018

WASHINGTON - U.S. Rep. Lamar Smith (R-Texas), chairman of the U.S. House Science, Space, and Technology Committee, delivered the following opening statement today at the Space Subcommittee hearing, *An Overview of the National Aeronautics and Space Administration Budget for Fiscal Year 2018*. Today's witness is **Mr. Robert Lightfoot, Jr.**, acting administrator, National Aeronautics and Space Administration.

As prepared for delivery:

Thank you, Chairman Babin. And welcome, Acting Administrator Lightfoot. It was good to be with you at Johnson Space Center (JSC) yesterday.

This Committee has consistently demonstrated that U.S. leadership in space is a bipartisan priority. The 2017 NASA Transition Authorization Act, signed into law

in March by President Trump, is a clear demonstration of that.

A key concept in the current NASA Authorization is “continuity of purpose.” Over the years, erratic direction and changes in mission have repeatedly led our space exploration effort astray. This fiscal year 2018 NASA budget shows that Congress and the Administration both support a consistent, focused space program.

The amounts requested in this budget for not only the Space Launch System and Orion crew vehicle but also for the commercial crew and cargo programs reflect this. These requests are much closer to past appropriations and are realistic and reasonable, providing an increased level of stability and continuity of purpose for two of NASA’s main initiatives.

This year’s Authorization Act also declares that NASA’s goals include extending human presence throughout the solar system. Accordingly, NASA continues to focus on Mars as its first interplanetary destination for human exploration. NASA is welcome to conduct missions to intermediate destinations on the way to Mars, such as the Moon, so long as those activities support subsequent journeys to Mars and beyond.

Previews of NASA’s Deep Space Gateway program architecture have given us a peek at NASA’s plans. We look forward to reviewing the Human Exploration Roadmap on how NASA plans to pursue its human space exploration goals in coming decades.

It’s good to see that the NASA budget request ends the previous Administration’s ill-conceived Asteroid Mission. The 2017 NASA Transition Authorization Act clearly reflects the concerns of both Congress and NASA’s Advisory Council about the utility and cost-effectiveness of that mission. Instead, other and more needed technologies will be developed under different programs.

Likewise, within the Science Mission Directorate, the budget promotes a much better balance among NASA’s many scientific endeavors, especially for planetary science.

And it starts to reverse the significant growth in Earth Science. The Obama Administration’s FY 2017 Earth science request was 42 percent higher than its request for planetary science — and that’s 75% higher than the amount requested for Earth Science in 2007.

As a reminder, there are many other federal agencies involved in earth science research, but only one that promotes space exploration. This budget reflects the idea that while NASA can continue to develop state of the art Earth sensing systems, it is not a piggy bank for funding climate activities already addressed elsewhere in the federal government.

The James Webb Space Telescope, which I saw under construction yesterday at JSC, continues on budget and on schedule after NASA and Congress worked to correct for overruns and delays. We continue to expect a launch in October next year.

NASA Science request supports other activities, too. The Transitioning Exoplanet Survey Satellite and the Wide Field Infrared Space Telescope will increase our understanding of exoplanets. I want to emphasize that the recent authorization bill directs NASA to “search for life’s origin, evolution, distribution, and future in the universe.” The James Webb Telescope, Wide Field Telescope, and Exoplanet Survey Satellite will certainly advance this priority.

Congress has the responsibility for setting the top-level direction and missions for NASA and has done so with the 2017 NASA Transition Authorization Act. NASA is responsible for providing a compelling plan and executing it. Now that we have received the budget request, it is Congress’ next responsibility to ensure NASA’s budget is prioritized and funded.

Of all the non-defense, non-security agencies in the federal government, NASA has received the most favorable proposed budget. And I expect that this Committee will continue to support American leadership in space.

Thank you, Mr. Chairman, and I yield back.

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To: Baum, Kristina[Kristina.Baum@mail.house.gov]; McDonald, Thea[Thea.McDonald@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Thur 6/8/2017 2:04:08 PM
Subject: Chairman Babin Opening Statement- An Overview of the National Aeronautics and Space Administration Budget for Fiscal Year 2018



For Immediate Release | June 8, 2017

Media Contact: [Kristina Baum](#), [Thea McDonald](#)

Chairman Babin Opening Statement

An Overview of the National Aeronautics and Space Administration Budget for Fiscal Year 2018

WASHINGTON - U.S. Rep. Brian Babin (R-Texas), chairman of the U.S. House Science, Space, and Technology Committee's Subcommittee on Space, delivered the following opening statement today at the Space Subcommittee hearing, *An Overview of the National Aeronautics and Space Administration Budget for Fiscal Year 2018*. Today's witness is **Mr. Robert Lightfoot, Jr.**, acting administrator, National Aeronautics and Space Administration.

As prepared for delivery:

NASA is a critical national investment in our future. Our nation has never faced a more challenging, relevant, or promising frontier than the vast reaches of outer space.

I am proud that this Committee clearly recognizes and demonstrates that U.S. leadership in space is a bipartisan priority. The recent passage and enactment of the 2017 NASA Transition Authorization Act this March is concrete proof of the bipartisan and bicameral commitment to NASA.

This budget reflects administration's commitment to the "continuity of purpose" described in the recent authorization. Honoring our commitments in space and maintaining a balanced portfolio are the surest ways for us to enjoy the full benefits of our space investments.

The numbers in this request are lower than the amounts in the enacted budget, which causes some concern. However, the preliminary budget blueprint was released before Congressional appropriations. Therefore, a lower request does not necessarily reflect a reduction in administration support for NASA. In fact, the current request is in line with recent levels appropriated by Congress. This goes a long way to fixing problems that have plagued NASA programs over the last eight years. This budget request is refreshing in that it does not propose slashing priority programs year-after-year. This will allow NASA managers to execute programs in an efficient manner.

I want to reiterate the Committee's commitment to NASA's long-term goals as described in law. Mars remains the first interplanetary destination for humanity. NASA is encouraged to carry out any necessary intermediate missions — particularly to the Moon — provided those missions advance future interplanetary exploration.

Closer to home, the future of the International Space Station is a top concern. Currently, the ISS will operate until 2024 but the role of the ISS beyond 2024 must be addressed soon. Similarly, I am also interested in understanding what NASA's plans are for future space suit work.

Turning to NASA's scientific exploration, this budget request restores balance across NASA's science portfolio and supports critical work across the entire science directorate. Work continues on the James Webb Space Telescope, which (I am proud to say) is currently in my home district at the Johnson Space Center for testing. The budget supports a range of small, medium, and large science missions, including the flagship Europa Clipper and Mars 2020 rover missions.

During the Obama administration, the pipeline for outer-planet missions was allowed to run dry. This budget returns support for a robust planetary exploration program, which is a national priority. US leadership in space science is critical, in part because it supports so much of NASA's broader mission.

Under this budget, NASA Aeronautics will continue its work on innovative technologies including a low boom supersonic flight demonstrator and hypersonic flight. These programs continue to benefit our civil and military

aeronautics efforts.

NASA's work in the Space Technology Mission Directorate will be critical in future space exploration. Work on space technologies like laser communication, in-space propulsion, and power systems will allow human exploration to complement the robotic exploration of Mars and other celestial bodies.

NASA has many exciting projects and missions across its portfolio. Indeed, NASA may be on the threshold of one of the greatest inflection points in the history of space exploration. Soon, SLS, Orion, Dragon 2, and Starliner vehicles will take their first flights. The James Webb Space Telescope will see first light. Human presence in low-Earth orbit is maturing and the ISS will begin evolving to the next phase of its life. And soon, NASA will begin construction of the Deep Space Gateway, the first permanent human outpost beyond low-Earth orbit. Of course, this era of excitement will also be a time of high risk. But with Congressional and Administration budgetary and political support, the next decade could mark a new golden age of space exploration.

I thank Acting Administrator Lightfoot for his testimony and look forward to this discussion.

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To: McDonald, Thea[Thea.McDonald@mail.house.gov]; Baum, Kristina[Kristina.Baum@mail.house.gov]
From: Science Space and Tech Committee Press SST Press
Sent: Wed 6/7/2017 10:52:09 PM
Subject: Smith Introduces American Space Commerce Free Enterprise Act of 2017



For Immediate Release | June 7, 2017

Media Contacts: [Kristina Baum](#), [Thea McDonald](#)

Smith Introduces American Space Commerce Free Enterprise Act of 2017

WASHINGTON - U.S. House Science, Space, and Technology Committee Chairman Lamar Smith (R-Texas) today introduced [H.R. 2809](#), the *American Space Commerce Free Enterprise Act of 2017*. This bipartisan bill is cosponsored by Space Subcommittee Chairman Brian Babin (R-Texas), Rep. Jim Bridenstine (R-Okla.), Rep. Ed Perlmutter (D Colo.), Rep. Dana Rohrabacher (R-Calif.), Rep. Randy Hultgren (R-Ill.), Rep. Randy Weber (R-Texas), Rep. Clay Higgins (R-La.), and Rep. Derek Kilmer (D-Wash.).

Chairman Smith: “This transformative legislation declares that America is open for business in outer space. The American Space Commerce Free Enterprise Act addresses issues that the committee has been tracking for years, including international obligations and commercial remote sensing. The bill establishes a favorable legal and policy environment for free enterprise with maximum certainty and minimum burden for

stakeholders. With this innovative legislation, we position the American space industry as a leader. New space operators would now be incentivized to set up shop on American ground and allow the United States to maintain and adhere to our international obligations as well as improving our national security. This enterprising bill provides an efficient, transparent, and streamlined structure for authorizing and supervising future space activities to create the path for future exploration of the final frontier.”

Space Subcommittee Chairman Babin: “I am very proud of the work that has been done so far on the American Space Commerce Free Enterprise Act. I believe strongly that this bill will provide American companies with the certainty that they need to operate in space. I appreciate the hard work of my colleagues Chairman Lamar Smith and Rep. Jim Bridenstine on this very important bill to ensure the space industry remains strong in America for years to come.”

Rep. Bridenstine: “Providing maximum certainty with minimal regulatory burden for the commercial space industry has been one of my top priorities in Congress. The American Space Commerce Free Enterprise Act moves us in the right direction. Years of uncertainty over which government agency has the responsibility to authorize and supervise commercial space activity has created a chilling effect in the industry, hindering capital formation and innovation. Chairman Smith, Chairman Babin, and I authored this bill to provide a clear, transparent process to meet Outer Space Treaty obligations while ensuring America is open for business in space.”

Background

The *American Space Commerce Free Enterprise Act of 2017* simplifies and strengthens the outdated space-based remote sensing regulatory system. At the same time, this bill enhances U.S. compliance with international obligations, improves national security and removes regulatory barriers facing new and innovative space companies.

This bill will:

- Create a single authority for U.S. authorization and supervision of nongovernmental space activities located at the Department of Commerce Office of Space Commerce

- Establish a transparent certification process in the least burdensome manner possible
- Provide greater certainty to assure nongovernmental space activities conform to the United States' Outer Space Treaty obligations
- Address concerns that certified activities may pose a safety risk to existing federal government space systems
- Reform the space-based remote sensing regulatory process
- Preserve ability to condition remote sensing operations to protect national security
- Enhance national security by ensuring insight into operations and capabilities by creating a competitive environment that discourages offshoring

The text of the bill can be found [here](#).

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To: Holland, Luke (Inhofe)[Luke_Holland@inchofe.senate.gov]
Cc: Price, Wendi (Inhofe)[Wendi_Price@inchofe.senate.gov]
From: Jackson, Ryan
Sent: Wed 6/7/2017 6:10:21 PM
Subject: Re: Is there a red line of this I could get for Pruitt?

Thanks.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

> On Jun 7, 2017, at 2:09 PM, Holland, Luke (Inhofe) <Luke_Holland@inchofe.senate.gov> wrote:

>

> I'd think so. We'll find out and get it to you.

>

> Sent from my iPhone

>

>> On Jun 7, 2017, at 2:04 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

>>

>>

>>

>> <IMG_0006.JPG>

>>

>>

>>

>>

>> Ryan Jackson

>> Chief of Staff

>> U.S. EPA

>> Ex. 6 - Personal Privacy

To: luke_holland@inhofe.senate.gov[luke_holland@inhofe.senate.gov];
wendy_price@inhofe.senate.gov[wendi_price@inhofe.senate.gov]
From: Jackson, Ryan
Sent: Wed 6/7/2017 6:03:21 PM
Subject: Is there a red line of this I could get for Pruitt?
IMG_0006.JPG
ATT00001.txt

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

Senate of the United States

In Executive Session

March 1, 2017

Resolved, That the Senate advise and consent to the following nomination:

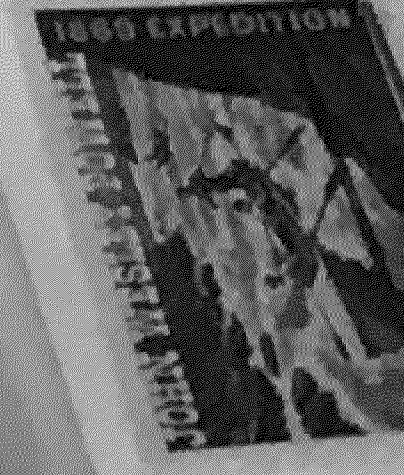
The following-named person to be Secretary of the Interior:

Ryan Zinke
of Montana

Attest:



Julie E. Adams
Secretary.



FIRST DAY OF ISSUE

CE. A.
AUG 1
1999

FIRST DAY
OF ISSUE



To: Good, Linda (Cochran)[Linda_Good@cochran.senate.gov]
From: Jackson, Ryan
Sent: Tue 6/6/2017 3:38:46 PM
Subject: RE: checking in

I didn't.

From: Good, Linda (Cochran) [mailto:Linda_Good@cochran.senate.gov]
Sent: Tuesday, June 6, 2017 11:37 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: checking in

Ryan – did you get my email with the attached resume or have any questions regarding

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

I wanted to be sure the email reached you.

I'm still keeping my eyes open for other candidates to send your way, as well.

Thanks - Linda



LINDA GOOD
Deputy Chief of Staff

OFFICE OF UNITED STATES SENATOR THAD COCHRAN
113 Dirksen Senate Office Building | Washington, DC 20510
Direct phone: 202.224.6406

To: Jonathan.Gray@mail.house.gov[Jonathan.Gray@mail.house.gov]
From: Jackson, Ryan
Sent: Sun 6/4/2017 6:34:06 PM

Do you have a moment to talk?

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

To: luke_holland@inchofe.senate.gov[luke_holland@inchofe.senate.gov];
wendi_price@inchofe.senate.gov[wendi_price@inchofe.senate.gov]
From: Jackson, Ryan
Sent: Thur 6/1/2017 5:17:26 PM
Subject: Last minute, but whatever.....

For scheduling purposes only:

All,

Thank you for expressing interest in attending today's Presidential announcement event in the Rose Garden at 3 PM.

We ask, if you can attend, that you complete this link as soon as possible:
<https://events.whitehouse.gov/form?rid=TTHJT3HDFV>. Information should be inputted as accurately as possible (please include full middle name). Any misspelled name or erroneous birthday could deny entrance. Please be sure to bring a state/federal issued ID.

Also, please have all enter through the 17th St and State Place entrance, on the SW side of the Eisenhower Executive Office Building (EEOB). The event begins promptly at 3 PM -- we ask you arrive at 2:20-2:30 PM.

Staff will usher you from the gate to the Rose Garden.

Please send me an email when you have completed the necessary information, and feel free to call me w/ questions.

Thanks so much!

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Mark Beebe
Sent: Wed 6/14/2017 1:26:56 PM
Subject: [Webinar] SAP Business Blueprint Auto-Generation

Webinar: SAP Business Blueprint Auto-Generation

Business blueprints created in Solution Manager tell SAP how to implement your business processes. The more detailed and accurate the blueprint, the more you get out of Solution Manager. Simple enough, right? Unfortunately, no. Creating blueprints has traditionally been such a time consuming task that most organizations have given up on the idea.

But what if you could *automatically* create and update blueprints in SAP Solution Manager 7.2?

Join us on **June 21st at 10:00am CDT** (GMT-5) to learn how you can:

- Populate and update Business Blueprints automatically with Worksoft Analyze
- Leverage Blueprints to implement Business Process Change Analyzer (BPCA)
- Integrate the Worksoft platform with Solution Manager to provide a complete automated testing and risk management solution

[Register Now](#)

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Steven Hughes
Sent: Wed 6/14/2017 1:14:12 PM
Subject: your certification options

Mike —

We have two certification programs coming up in July and early August and I wanted to see if you wanted to sign up for one.

Certified Government Performance Manager (CGPM)

On July 17-20, we're holding the next core course in this program covering Strategic Planning and Performance Measurement for Government. This is the foundation course for the certification — or you can simply receive a certificate in the core course topics. This program is timely as it addresses the latest performance measurement and government reorganization mandates in the FY 18 budget.

Govt Lean Six Sigma Green Belt (LSS)

On July 31 to August 4 we are offering our Government Lean Six Sigma certification course. This will help you lead process improvement projects within your government agency and will make you quite marketable long term in both government and the private sector.

Would you like to reserve a spot in either program? We have some discounts available if you sign up in the next week or two. Let me know if you're interested, and I'll send you the materials.

Thanks,

Steven Hughes
Deputy Director, Outreach
[The Performance Institute](#)

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Home Performance Coalition
Sent: Thur 6/8/2017 12:31:28 PM
Subject: Announcing the 2017 Southeast Regional Home Performance Conference & Trade Show

We are excited to join together with local host, South Carolina Building Performance Association (SCBPA), to engage industry leaders along with fellow weatherization professionals, home performance contracting businesses, builders and remodelers, program administrators, and others working in the residential energy efficiency industry for a cutting edge educational experience at the 2017 HPC Southeast Regional Home Performance Conference and Trade Show, September 28-29, 2017.

Now offering two-day or one-day options.

- **DAY ONE**, we offer you tailored sessions and a boutique-crafted trade show.
- **DAY TWO**, you have the opportunity to join like-minded, regional peers for a day of deeper discussions surrounding important local, SCBPA topics.

TD Convention Center
1 Exposition Dr.
Greenville, SC 29607

Registration is open. Don't delay.

Get Involved in South Carolina!

Exhibit in South Carolina!

This trade show offers a unique marketing and branding opportunity to showcase products, equipment and services, while allowing you to capture quality leads and expand your customer

base. The trade show floor is the hub for demonstrating new products and techniques, providing immediate and future sales, as well as product research and test marketing. [Learn more here.](#)

Become a Conference Sponsor!

Sponsor this event and raise your company's brand awareness, support workforce development and publicly demonstrate your commitment to energy efficient, healthy, sustainable homes. Pick your level of involvement or become a coveted Host Sponsor. [Learn more here.](#)

Connect with us

Home Performance Coalition | 844.370.5748

[E-mail](#) | [Website](#)

Home Performance Coalition (HPC) | 1424 K Street NW, Suite 500, Washington, PA 20005

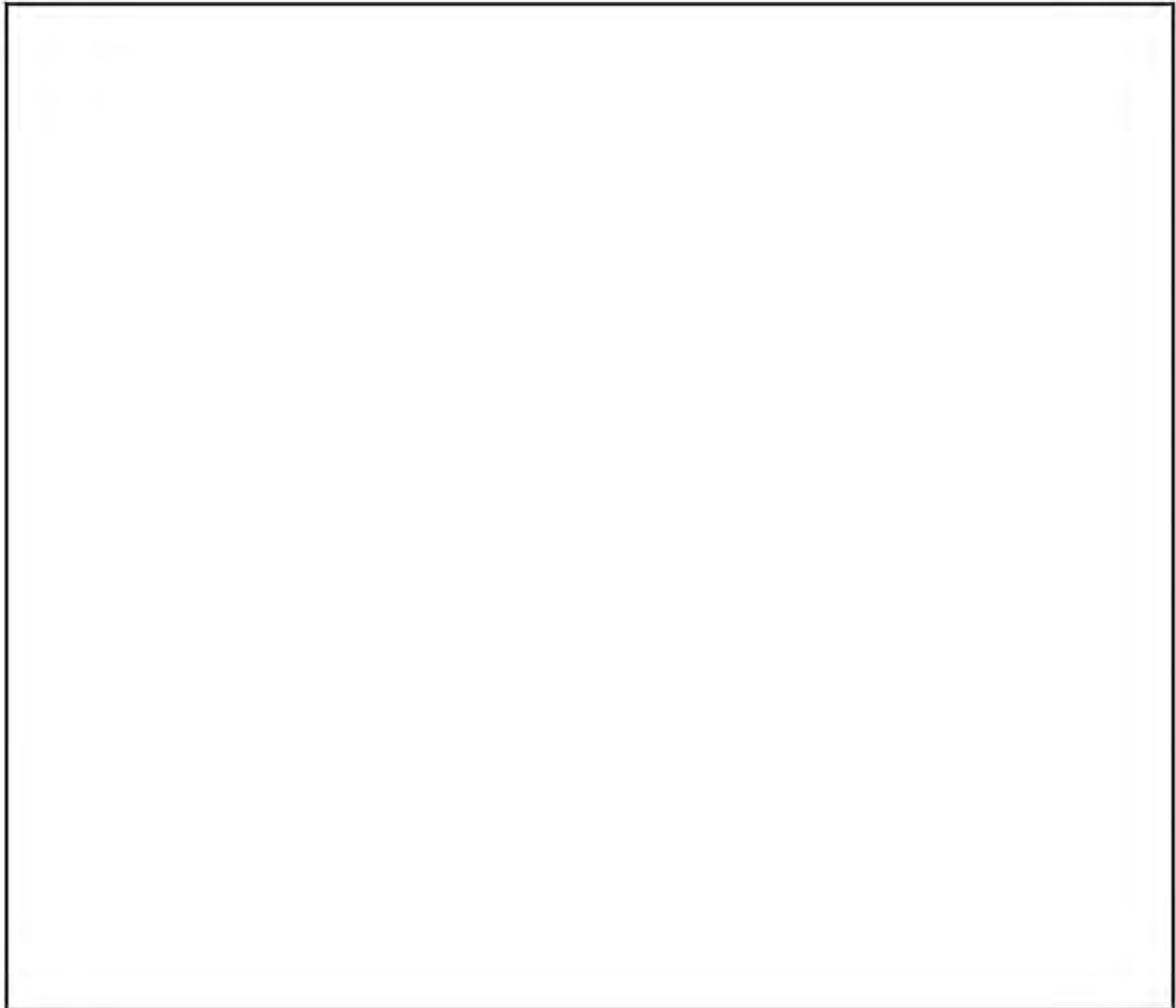
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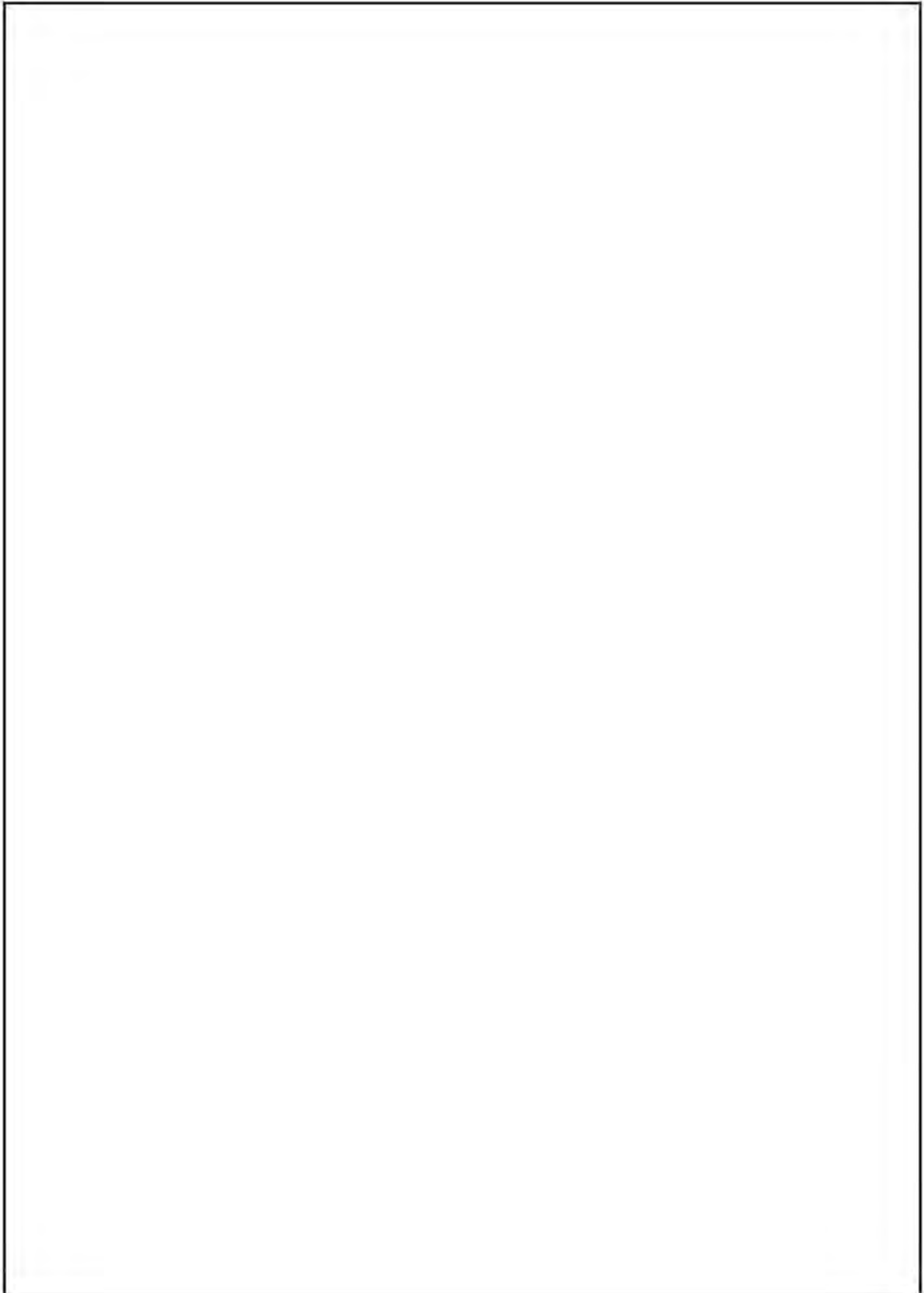
[About our service provider](#)

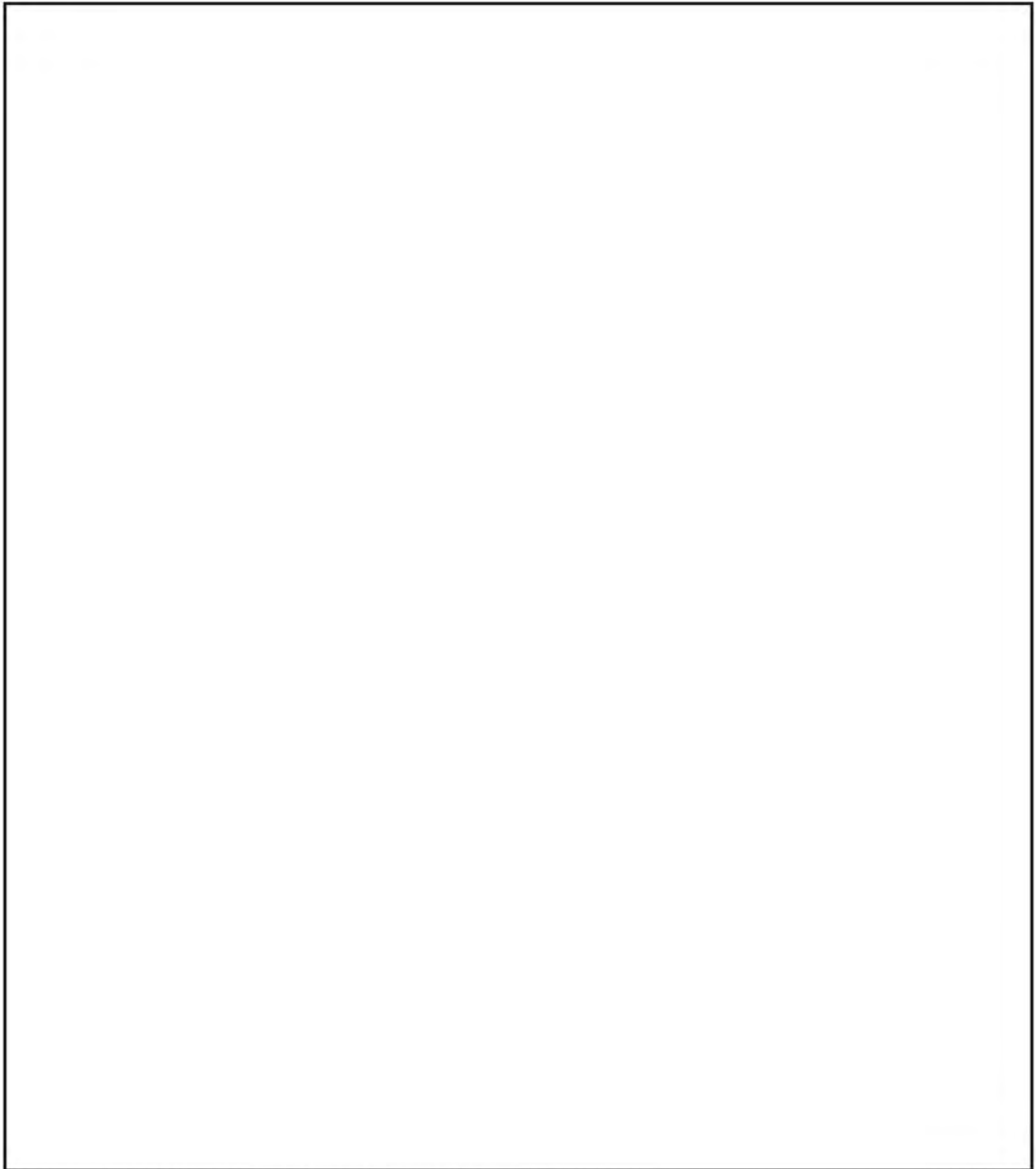
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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Steve Clemons
Sent: Fri 6/2/2017 8:47:12 PM
Subject: Agenda - 7th Annual Economy Summit - June 6th







To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Thomas Koll (CEO)
Sent: Mon 6/12/2017 2:41:40 PM
Subject: Using the New Windows Easy Transfer Replacement Software

How to use the new Windows Easy Transfer replacement software

With the release of Windows 10, Microsoft no longer offers Windows Easy Transfer but recommends software from Laplink instead.

If you relied on Windows Easy Transfer in the past, attend this webinar to learn more about PCmover, the software that Microsoft now recommends for PC migration.

You should also attend if you are responsible for new PC deployments/refresh projects regardless of the tools you have used in the past.

Learn how to cost-effectively upgrade and deploy new PCs with PCmover Enterprise – shown to save at least \$300 for each new PC deployed.

Whether you are planning to deploy Windows 10 (or are already have a deployment in process) – or even if you are still using Windows 7 or XP, invest 30 minutes and find out how to save time and money with every new PC you deploy!

To register for the webinar:

1. [Click here to sign-up](#)
2. Click "Register".
3. On the registration form, enter your information and then click "Submit".

We will send you a confirmation email with instructions on how to join the event.



Host: Thomas Koll (CEO)
Length: 30 minutes
Date/Time:
Wednesday, June 14, 2017
@ 10:00 AM PST

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: New Pig Federal
Sent: Tue 6/6/2017 4:10:30 PM
Subject: Go ahead — take 15% off everything!

No minimum purchase. Ends Friday.

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PIG Heavy-Duty Maintenance Wipers

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Home Performance Coalition (HPC)
Sent: Fri 6/2/2017 7:22:07 PM
Subject: Leaving the Paris Accord is a Wrongheaded Decision and Defies Science

Contact: Lindsay Bachman Flickinger
Home Performance Coalition
www.homeperformance.org
Phone: (412) 424-0085

Leaving the Paris Accord is a Wrongheaded Decision and Defies Science

Especially in Cities like Pittsburgh

June 2, 2017 – Pittsburgh, PA – Yesterday, President Trump announced to the world that America will rescind from the Paris accord leaving the U.S. diplomatically at odds with 194 countries on climate, taking the United States of America from “America First” to “America Alone” on climate change and clean energy job creation. The president said, “I was elected to represent the citizens of Pittsburgh, not Paris,” suggesting that the people of Pittsburgh and all across America desire dirty coal and are anti-clean energy. With offices in Washington D.C. and Pittsburgh, PA, the Home Performance Coalition (HPC) takes issue with the president’s views on clean energy, the misrepresentation of the city of Pittsburgh, and also that fact that he is not even speaking for half, let alone the majority of Americans.

In response to President Trump’s twisted depiction of Pittsburgh, Mayor Puduto tweeted, “As the Mayor of Pittsburgh, I can assure you that we will follow the guidelines of the Paris Agreement for our people, our economy & future.” Declaring Pittsburgh’s promise to uphold the Paris accord, Peduto joined 86 other mayors likewise committed to upholding the agreement.

“Trump can turn his back on the Paris accord but we will bring Paris to Pittsburgh and beyond through education, policy, and outreach. That’s the HPC way,” said Lindsay Bachman Flickinger, Pittsburgh born and raised, Director of Marketing and Communications. For example, in November, HPC released its report, A Policymaker’s Guide to Incorporating Existing Homes into Carbon Reduction Strategies and Clean Power Plan Compliance outlining ways in which existing homes are a key aspect to carbon reduction strategies, with details on how they complement the Clean Power Plan (CPP). Along with providing a succinct and educational overview of how the residential community fits into the CPP, this report demonstrates how state and local authorities, like Mayor Peduto and other officials, can move ahead to create jobs and reduce carbon emissions through residential energy efficiency.

“I grew up hearing stories about the skies of Pittsburgh turning dark at noon and the rivers being filled with soot and pollution. Since those days, our city has come so far in its revitalization, due in

large part, to its commitment to clean energy and carbon reduction. Pittsburgh's environmental turnaround is certainly one reason why our city continues to top so many "best of" lists- from most livable to best places to travel. Despite President Trump turning his back on the Paris accord, the Clean Power Plan and the EPA, we in Pittsburgh remain committed to our role as leaders in clean energy and global responsibility," said Nate Natale, Pittsburgh native-based, Vice President of Education and Events.

Also troubling is that this decision to withdraw is based on last century's economic thinking. This will turn the U.S. back to yesterday's economic policy and will be a drag on our businesses' ability to respond to the new economy of the 21st century. In abandoning the Paris accord, the U.S. will lose out on new jobs and economic opportunities of the low-carbon, clean energy future. "Leaving the Paris accord, is a wrongheaded decision, defies science and abandons simple cheap easy ways to cut CO2 through energy efficiency," said Brian T. Castelli, President and CEO of HPC.

HPC, along with local Pittsburgh allies such as CCI, ReEnergize Pittsburgh and the Will Allen Foundation, as well as national partners such as E4TheFuture, Efficiency First, Home Energy Magazine and BPI will continue to fight for a clean energy future that ensures all homes, for all Americans, are healthy, comfortable and energy efficient.

The Home Performance Coalition (HPC) is a non-profit 501c3 that advances policy change through policymaker education, stakeholder engagement, research, trainings and conferences for companies, businesses and other stakeholders in the home performance industry. For more information, please visit www.homeperformance.org.

Home Performance Coalition | 1424 K Street NW, Suite 500, Washington, DC 20005

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Sustainable City Network
Sent: Thur 6/1/2017 12:07:07 AM
Subject: Top News: Lean Urbanism Recalls a Simpler Time

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May 31, 2017

Lean Urbanism Recalls a Simpler Time

Making Small Possible in a Red-Tape World

By Julianne Couch

A traffic jam in Miami suggests to some that modern urbanization needs a reboot.

Over the last several decades, real estate developers and urban designers have watched building code books swell from the size of small booklets to the size of dictionaries.

Some say the increase in regulations has been essential to protect life, limb and property. Others think politics, special interest groups and neglect have supplanted common sense to create a hopelessly complex array of outdated, expensive and unnecessary mandates that serve to push small developers out of the marketplace altogether.

The Project for Lean Urbanism, created by a nonprofit group of architects, engineers, planners and policymakers, is trying to reverse that trend. The group is launching pilot projects in four U.S. cities with the goal of stimulating entrepreneurship and economic growth by cutting red tape and providing free tools that make the development process less intimidating for beginners. The four cities -

Latest News
Lafayette, La., Chattanooga, Tenn., Saint Paul, Minn., and Savannah, Ga. - were chosen for their commitment to lowering the barriers to small-scale economic development.

Action Taken to Postpone Power Plant Effluent Compliance
One of the groups behind the effort is the Congress for New Urbanism (CNU), which works to advance the concept of New Urbanism to guide public policy and create "vibrant and walkable cities, towns, and neighborhoods where people have diverse choices for how they live, work, shop, and get around," according to the organization's charter.

Pittsburgh Driving Development of Green Innovations
A key figure in the CNU is Andres Duany. In an address at a conference in Dallas, Duany explained that New Urbanism was once a revolutionary approach to replicating the pre-1970s way of urban development. Today, he says, the movement needs to be reconsidered.

10 Midwestern Cities Where Solar Power Has a Big Payoff

SEATTLE -- Just because you don't live in the sunniest region of the U.S. doesn't mean you can't benefit from solar power. There is act...

Governor Announces \$35 Million to Expand After-School Programs

ALBANY, N.Y. -- Governor Andrew Cuomo announced \$35 million in funding available for high-need school districts across New York to establish q...

Study Documents Job Growth from Energy-Saving Tax Incentive

WASHINGTON -- As many as 77,000 new design and construction jobs would be created annually over 10 years, along with almost \$7.4 billion...

Indianapolis Recertifies and Becomes 4-Star Community

WASHINGTON -- Earlier this month, the city of Indianapolis, Ind., became the first Certified STAR Community to recertify under the STAR ...

NLC Reveals Top 10 Issues That Matter to Cities in 2017

WASHINGTON -- A comprehensive analysis of mayoral state of the city speeches released by the National League of Cities finds that econom...

FROM OUR VALUED SPONSOR



North Carolina Awarded Grant to Protect Water Quality

WASHINGTON -- The U.S. Environmental Protection Agency recently awarded \$2,652,592 to the North Carolina Department of Environmental Qua...

U.S. Sues Fiat Chrysler for Alleged Clean Air Act Violation

WASHINGTON -- The Department of Justice, on behalf of the Environmental Protection Agency, recently filed a civil complaint in federal c...

National Tribal Energy Summit Explores Energy Sovereignty

WASHINGTON -- Representatives from tribal and state governments, federal agencies, private industry, utilities, and academia came togeth...

EPA Stays Landfill Methane Rules

WASHINGTON -- The U.S. Environmental Protection Agency announced a 90-day administrative stay for the August 2016 New Source Performance...

County Wins Seven National Association of Counties Awards

PHOENIX -- Seven Placer County programs won awards this year from the National Association of Counties, recognizing innovation in count...

Creativity Flows in Intersection Design Contest for Six Points

FORT WORTH, Texas -- Scout Harrell won the most votes in the Fort Worth Intersection Design Contest, so her pavement design will be featured a...

Student's Plans to "Disrupt" Urban Flooding Wins EPA Award

WASHINGTON -- The U.S. Environmental Protection Agency has announced the winner of its "Patrick H. Hurd Sustainability Award" is Adam Na...

Kaiser Permanente Honored With 17 Environmental Awards

OAKLAND, Calif. -- In recognition of its groundbreaking achievement and innovation in health care sustainability, Kaiser Permanente, the natio...

Online Course

Lean Thinking: Process Management Made

Online Course

The End of Tree Plagues

How do we blunt Emerald Ash Borer (EAB) losses, stop the next tree plague from devastating our communities, and create a better, stronger, resilient future forest?

Sustainable City Network will host a 4-hour online course June 7-8 for civil engineers, landscape architects, architects, urban foresters, planners, or anyone responsible for the care of trees. It will provide professionals the tools to communicate and implement a staged Ash tree canopy removal and replacement with a resilient future forest.

The course will demonstrate how to stage Ash tree loss impacts from EAB over time to optimize budgets, utility and social benefits during this traumatic tree crisis.

Product & Industry Announcements

Sustainable City Network and the Northwest Environmental Training Center have teamed up to offer this 6-hour online course June 20-22 on the Lean process improvement system.

Nova Bus Equips Montreal with Its First Fully Electric Buses
MONTREAL -- Nova Bus has announced that Montreal is the first city in North America to put Nova Bus 100 percent electric buses in service. The...

Our Lean Master certified instructor, Brion Hurley, is principal Lean consultant at Rockwell Collins. He will introduce the history of Lean concepts, derived from the Toyota Production System, and explain how and why they have come full-circle back to the United States.

Republic Services Reduces Emissions by Using More Natural Gas
PHOENIX -- Republic Services, Inc., announced that the company will increase its usage of renewable natural gas by three times what it...
VR Completes Forest Gooding Installation of Aerolife Lighting
Results of Lean initiatives have led to increased customer and stakeholder satisfaction, reduced costs, reduced risks, increased sales, and more flexible and agile organizations. Perhaps the largest benefit has been more engaged employees, where people enjoy the work they do.

Lean is Not a New Concept as this Approach has been used by many companies and organizations for the past three decades. However, most of the effort over that time has been done at large corporations, and only recently have they been adopted and embraced by smaller organizations and agencies. Examples of lean successes can be found within city and state agencies, utilities, nonprofits, law firms, military, public schools, startup companies, movie studios and even farming!

[Learn more...](#)

Free Webinar

FEMA Reporting: A Sustainable Approach

Sustainable City Network will present the free 1-hour webinar FEMA Reporting: A Sustainable Approach on Tuesday, June 6, beginning at 4 p.m. Eastern Time (1 p.m. Pacific).

A disaster could happen any minute — is your local

government
prepared to submit
required reports to
the Federal
Emergency
Management
Agency? Or, will
your team waste
hundreds of hours
scrambling to
provide FEMA with
activity plans, time
records, material
usage, and photos
for reimbursement?

Join the City of
Arlington, TX Parks
and Recreation
Department as
they:

- Walk you through
a real-life flood
scenario they
experienced.
- Cover disaster
reporting tips and
best practices.
- Share techniques
for efficient FEMA
reporting.
 - Discuss using
historical data to
plan for the future.

[Register now...](#)

[Read more...](#)

Online Course

Creating a Sustainability Strategy

Sustainable City
Network will present
a webinar series in
July for any
personnel who are
responsible for
developing
sustainability plans,
greenhouse gas
emission
inventories, climate
action plans or any

Sustainable City Network operates a website (www.sCityNetwork.com), customized e-newsletters, online training, consulting, and interactive tools dedicated to providing quality and timely information on sustainability products, services and best practices to leaders in government, education and healthcare.

**Sustainable City
Network** for a
801 Bluff St.
Dubuque, IA 52001
institution.

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The 6-hour online course, Creating a Sustainability Strategy for Your Organization, will be delivered live on July 11-13. Sessions will be recorded so registrants may attend live or via on-demand streaming video.

This course, featuring veteran instructor Antonia Graham, will focus on the implementation and strategic thinking that is required to implement a Sustainability Plan. Too often, we write a plan and have the greatest intentions of implementing all of the metrics only to have these ideas fall flat because of politics, organizational culture, or lack of support from the top. This course will teach you how to incorporate storytelling and systems thinking into a strategic plan that gets your plan implemented and enables you to move the needle further and faster to create a more sustainable community.

This course will be presented in three 2-hour sessions held

on consecutive
days, July 11, 12
and 13, 2017. Class
sessions will begin
promptly at 10 a.m.
Pacific, 11 a.m.
Mountain, noon
Central and 1 p.m.
Eastern. (Group
rates available on
the registrations
page.)

563.588.3853

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Hewlett Packard Enterprise
Sent: Tue 6/6/2017 3:16:30 PM
Subject: New survey: IT decision-makers say hybrid IT delivers best of both worlds

06.06.2017

Cloud & Hybrid IT_

New survey: IT decision-makers say hybrid IT delivers best of both worlds

Cloud & Hybrid IT_

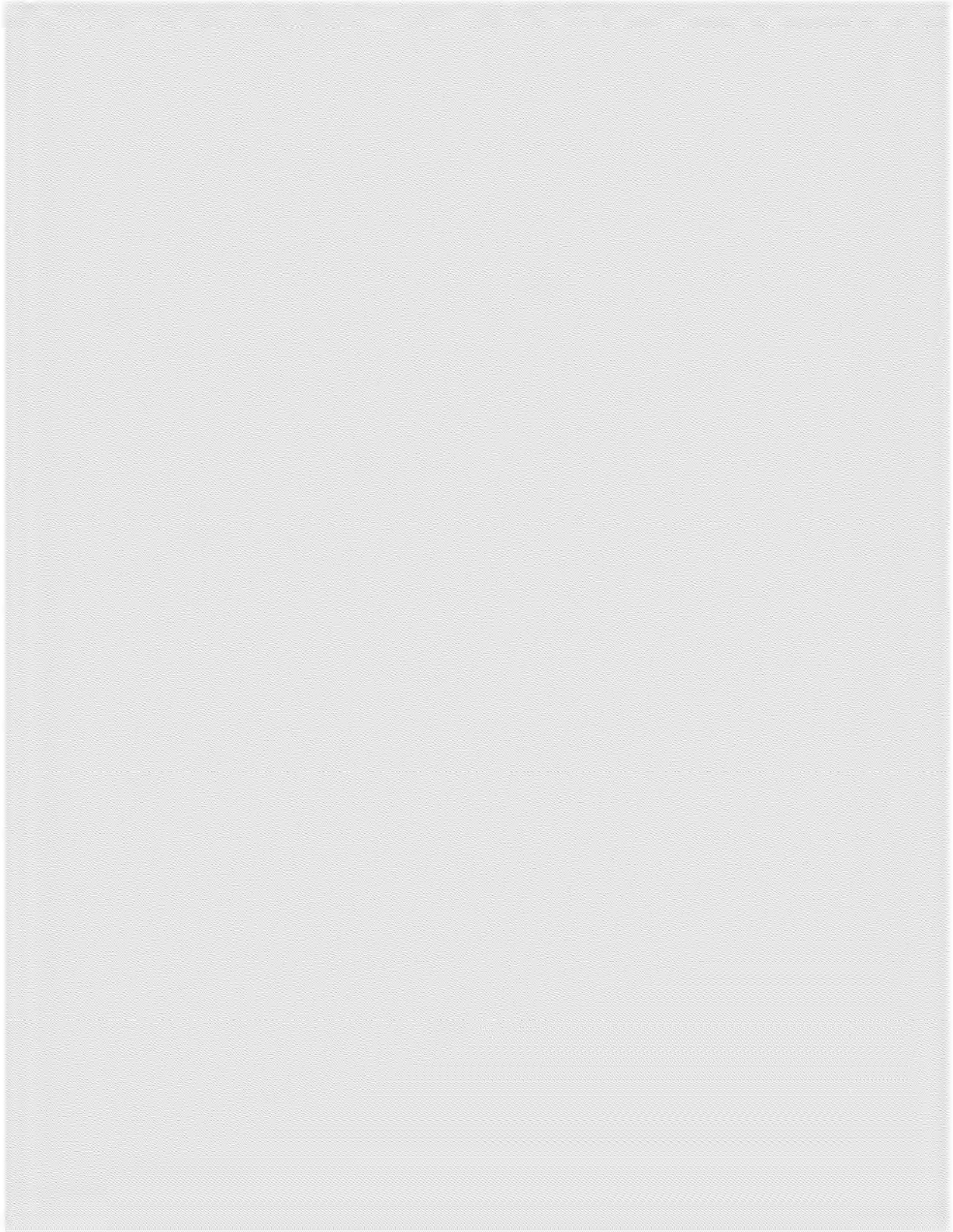
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Networking_

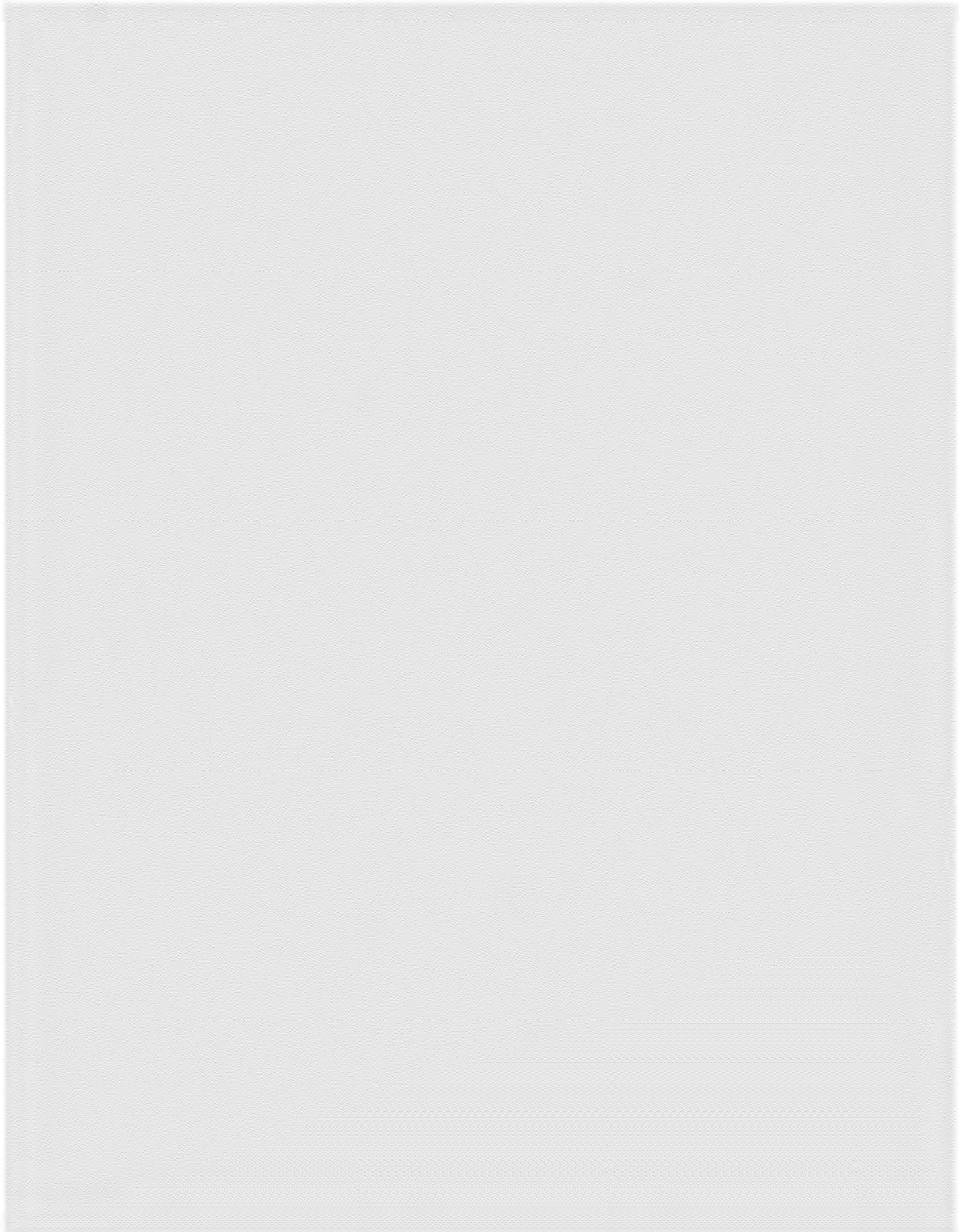
The first 5 things to do when your Linux server keels over

Storage_

How not to get hacked by Mr. Robot



Articles you can't miss:



Networking

How line-of-business tech spending is disrupting central IT

Analytics

The Intelligent Edge: What it is, what it's not, and why it's useful

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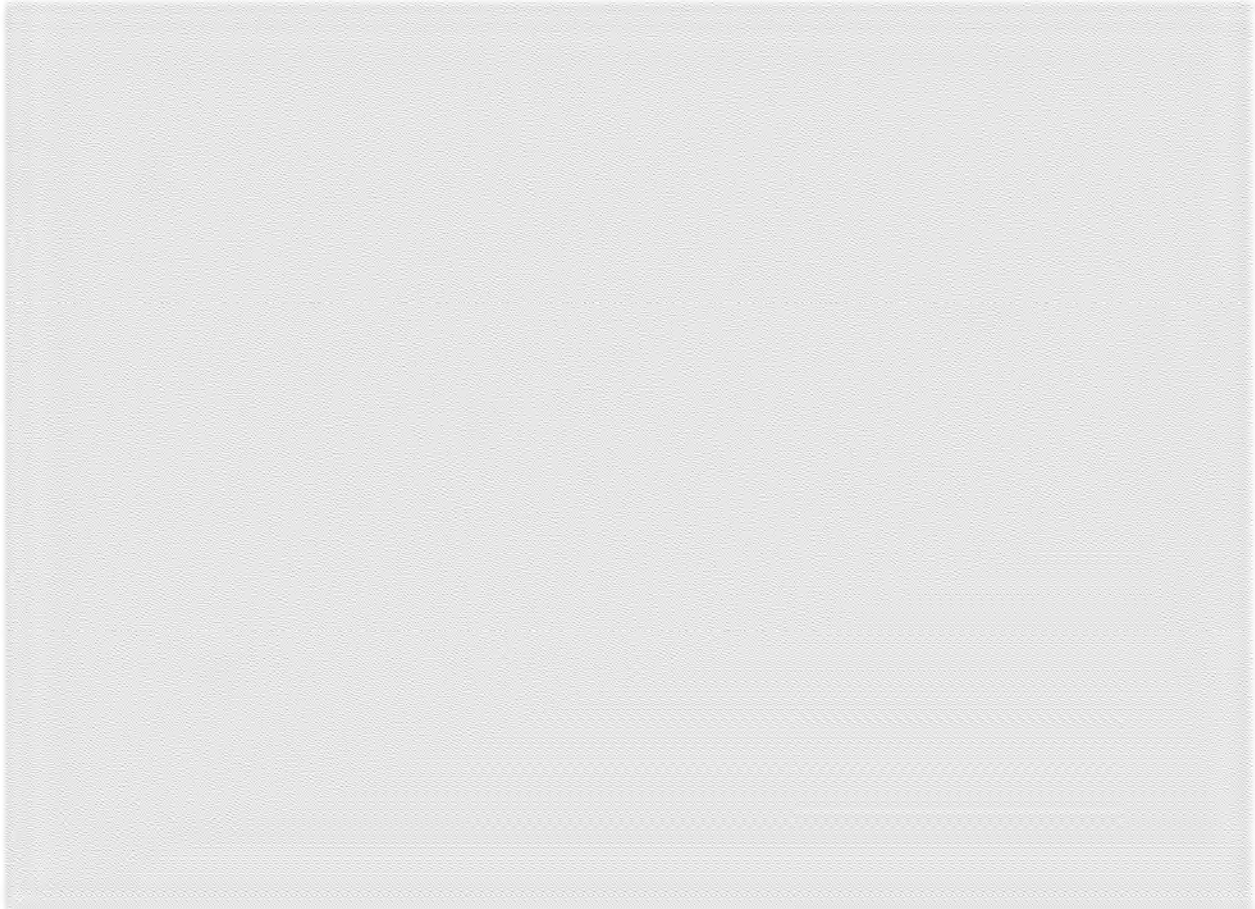
Three batteries that could power our future

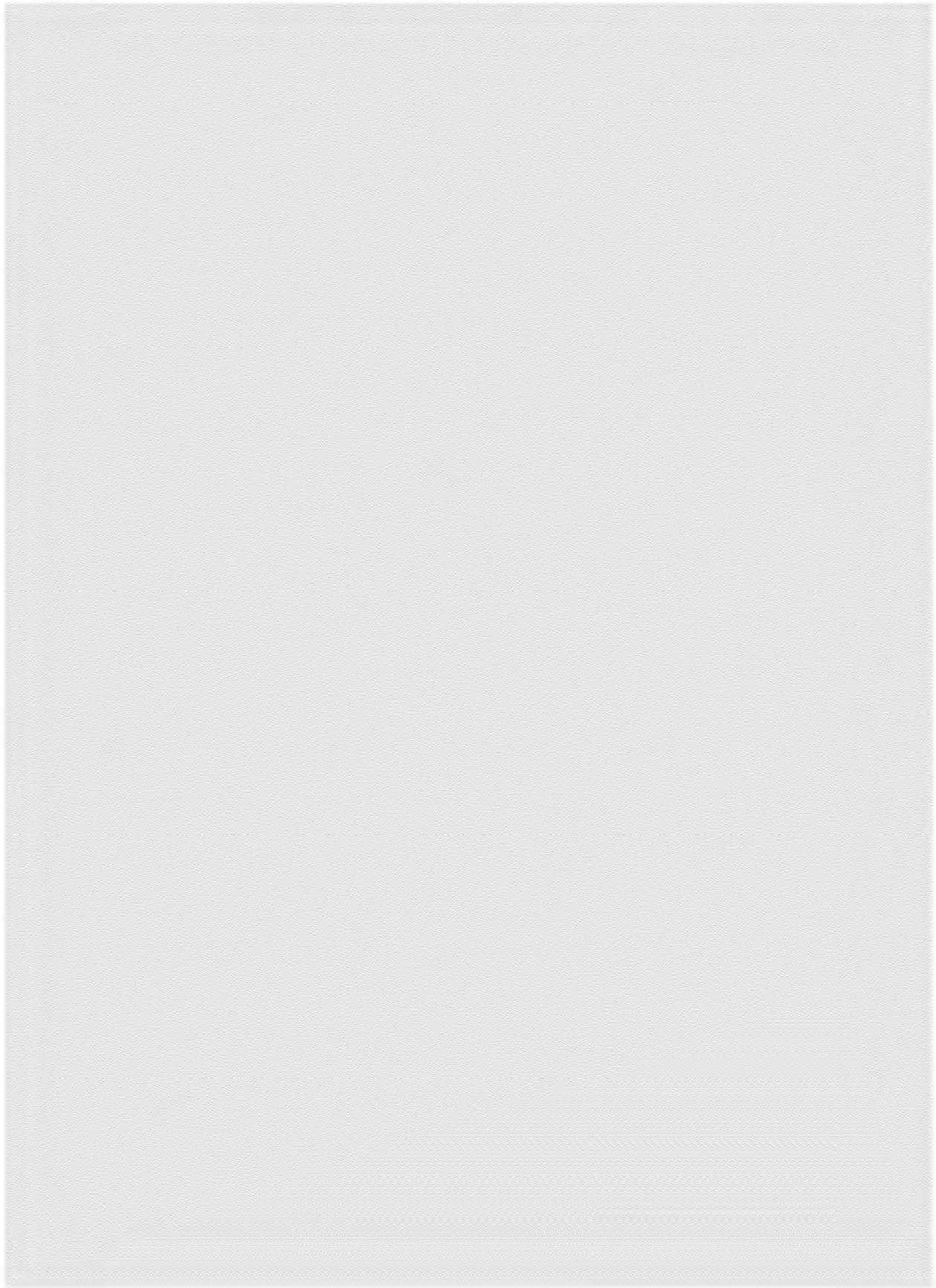
IoT

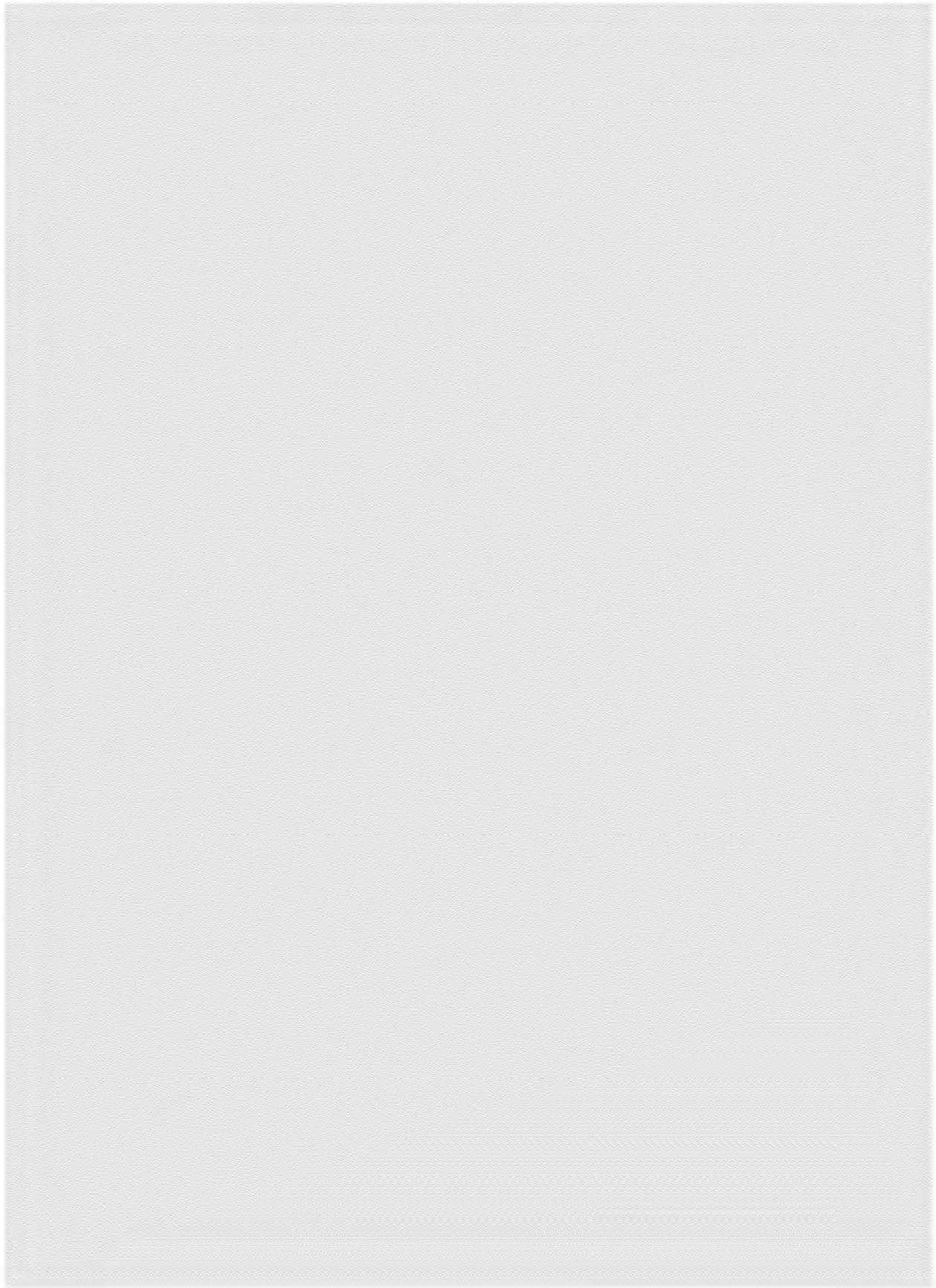
Tech in the sticks: How technology is defining the future of the rural world

Digital Transformation

How to find and become a mentor in IT







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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Home Performance Coalition
Sent: Wed 6/14/2017 11:51:27 AM
Subject: Your HPC Weekly News

HPC News & Perspectives

June 14, 2017 | Issue 55

Who's Who At HPC?

Summer Series

Gypsy Matlak

Last week we began a series of blog posts called "Who's Who at HPC?" Over the next few weeks we will introduce you to HPC staff, featuring both personal and professional tidbits of information to help you get to know us better. Each staff member will answer the same questions, such as: What do you enjoy the most about your role?; What is your proudest accomplishment?; What do you enjoy doing outside of work?; etc.

Today we focus this series on
Gypsy Matlak

Gypsy Matlak is the Accounting Manager at HPC. She handles accounts receivable, accounts payable, payroll and HR responsibilities. She has a Bachelor's degree in Business Administration with a concentration in Management. Previously, Gypsy managed companies in the window, door and sunroom industries. She was also the Business Manager for the Baiert Family YMCA, where she gained her non-profit experience.

What is your proudest accomplishment at HPC?

Conference Happenings

I guess that would be helping us to get through the transition from ACI to HPC. When I started at the beginning of November, we had literally just become HPC. There was so much work to be done and so many things to be organized. Our CFO, Jean Nagy, was coordinating it all, and I was here to help her get everything done. We had to set up all new accounts with our vendors, Association (SCBPA), to engage industry payroll company, insurance companies, inform leaders along with fellow weatherization professionals, home performance contracting out attendees, etc. It took months to get it all

This is National Healthy Homes Month!

HPC is excited to partner with HUD's National Healthy Homes Month campaign. Last week we discussed HPC's commitment to this cause by evidence of our healthy homes assessment sessions. [Continue reading more about Gypsy](#)

Southeast Regional Home Performance

Conference and Trade Show

Over the next few weeks, we will share a variety of IAQ & Healthy Homes sessions found at HPC conferences, demonstrating HPC's commitment to healthy homes via our work in projects, policy and education. We hope you also [get involved and follow #NHHM2017](#) on twitter.

Conference Hosts:

HPXML

HPC develops new approaches to federal, state and local policies that promote growth in the residential energy efficiency sector through [research, verification, and policy analysis](#).

Last week we began a series of blog posts

explaining just exactly how HPC is working for you! Over the next few weeks we will highlight

THIS WEEK'S THEME IS PEST FREE!

In keeping with the Pest Free, "learn about the hazards of pests and how we are bringing a moving target like pests and pests" theme, we'd like to highlight the [Weatherize & Exclude Pests: Two Birds, One Stone](#) session presented by [Jayne Windham](#), Consultant and Trainer, Cornell University's Stop Pests

Today we focus this series on **EXHIBIT** in South Carolina **SPONSOR** the Event

Summer Home Energy Magazine Issue is out!

Home Energy's Summer issue covers a range of topics, including Passive House and HVAC design in Energy Star homes. You'll also find an in-depth look at the opportunities that can be found in the advancing home energy management market. [Check out this free issue.](#)

Philadelphia Marriott Downtown

Partner News

301 Market Street
Philadelphia, PA 19107

Efficiency First Webinars!

Wednesday, Tuesday, June 20 - How to "Green" Your Local MLS in Months, Not Years (with Ryan Miller) [Register here](#). Efficiency First members have unlimited, free access to live webinars. If you aren't already a member, [join today!](#)

CALLING ALL PRESENTERS

The Call for Proposals is NOW OPEN!

EM&V FORUM SUMMER WORKSHOP: COST EFFECTIVENESS TESTING FOR NEXT-GENERATION ENERGY EFFICIENCY

The 2017 regional workshop on Cost Effectiveness for the Next Generation Energy Efficiency will bring together program administrator, implementer, industry, policymaker, evaluation and other stakeholders to share information and get inspiration about how cost-effectiveness can lead the energy efficiency industry into the next generation.

answers to these important questions: What is HPXML?; Why is it important?; Who uses it?; and, How is it maintained?

Click here to read the full article by Deborah E. Miller, HPC's Director of Business Development & Strategic Projects.

Philly.

Conference Education
bdittmar@homeperformance.org
Exhibit/Brand/Sponsor - Chris Docchio -
Director of Partner Relations
cdocchio@homeperformance.org

Introducing the 2017 HPC California Regional Home Performance Conference in Long Beach, Nov. 14-15.

Hilton Long Beach
701 W Ocean Blvd
Long Beach, CA

CALLING ALL EXHIBITORS

CALLING ALL PRESENTERS

The Call for Proposals is NOW OPEN!

Learn how YOU can get involved in Long Beach.

Program. Read the full article here.

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[Quitting the Paris Climate Pact in Historical Perspective](#)

By Jay Hakes, RealClear Energy

6 June 2017

Until last week, Richard Nixon was responsible for the two worst-conceived American energy policies. On June 1, Donald Trump's announcement of U.S. withdrawal from the Paris Climate Accords displaced all competitors as the worst presidential initiative on energy in our nation's history

[Trump May Restrict Length of Environmental Reviews Under Infrastructure Plan](#)

By Melanie Zanona, The Hill

07 June 2017

The Trump administration may enforce restrictions on the length of environmental reviews as part of an effort to streamline the project approval process in his \$1 trillion infrastructure package.

[Good Intentions, Poor Results](#)

By Charles Cormany

08 June 2017

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Sandhills Publishing - Lincoln, NE

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Questions?

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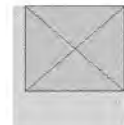
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Subject: Webcast & Live Chat: Digital Transformation and Hybrid Data Management



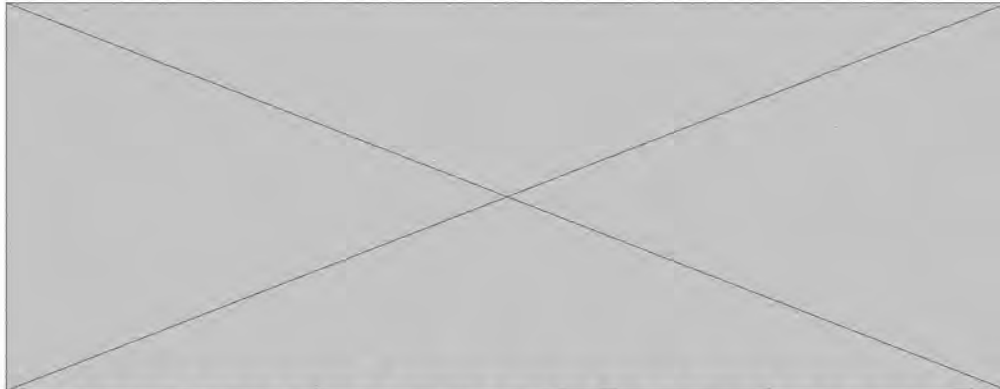
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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: National Environmental Health Association
Sent: Tue 6/6/2017 3:04:46 PM
Subject: [SPAM] NEHA 2017 AEC: Less Than 2 Weeks to Register to Exhibit

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From: Oracle Corporation
Sent: Thur 6/8/2017 8:04:47 AM
Subject: Webcast & Live Chat: Best Practices to Speed Up Your Database Deployments

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Webcast & Live Chat: Oracle VM Templates Best Practices for Rapid Oracle Database Deployment

June 21, 2017

10:00 AM PT / 1:00 PM ET



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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Home Performance Coalition
Sent: Mon 6/12/2017 11:47:14 AM
Subject: Attend HPC's Southeast Regional Conference in S.C. & Submit session proposals for California Regional & National 2018 conferences!

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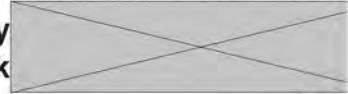
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Sent: Tue 6/6/2017 2:56:49 PM
Subject: Where VPNs and Firewalls can fail at US Environmental Protection Agency

How VPNs and Firewalls Put Your Organization's Security and Compliance at Risk



VPNs and Firewalls have traditionally been critical parts of every organization's IT security posture. But today's security threats, employee work habits, and IT infrastructure have all changed to make them less relevant and potentially even dangerous to your organization.

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The Cryptzone Team



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US Electric Utilities & IPPs

In Search of Western Opportunities

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California 1x1 Mini-Conference yields trove of datapoints across sector

We hosted our annual UBS West Coast Mini-Conference in SF & LA this week with investors and executives across utilities, power, and renewables. We hosted a variety of companies including AGR, AVA, BKH, EE, ES, NJR, PCG, and PEGI. The focus was clearly on California utility policy given the slew of regulatory meetings as well including updates on both the Cost of Capital case as well as key further capex items.

Where are we seeing some confidence in California? SONGS Settlement

Among the most notable elements in our latest California meetings was an emerging confidence that a settlement was quite possible with respect to the long-standing SONGS situation between EIX and parties. We emphasize that despite the inclusion of a wide array of parties including Aguire, progress remained ongoing and we note the latest August timeline with a mediator bodes well for EIX. We continue to expect a further monetary payment in exchange for forgoing formally reopening the docket.

Where are the challenges in California? EIX's rate case

We continue to perceive clear challenges to SCE's pending GridMod spend embedded in its pending rate case. We note multiple parties including ORA, TURN and even solar constituencies have filed challenging the proposal put forth by the company. The question appears to be just how much of the capital will ultimately be approved. To this end, we also note some concern on the opacity of the associated Cyber Security spend of ~\$300 Mn in the case.

Cost of Capital Settlement: Don't Perceive Much Hope

Following the replacement of the original Proposed Decision (PD) with a revised arrangement, resulting in just a one-year stayout vs. a two-year deal originally contemplated, we note limited confidence among parties for a return to the original deal. We suspect this will remain a small but known positive in the very near term. The core question to which few have a clear view is just where any future cost of capital case is heading.

What about the core capex issues? EVs on the menu as well as gas storage

We note the relative size of the EV spend under the latest Medium & Heavy duty EV filing appears to be gaining some level of traction with parties; this is notably larger than the capex committed under the original light vehicle petition approved last year for ratebasing charging stations. Further, we see gas storage as meriting close attention into the finalization of rules in the ~September timeframe, likely resulting in ~\$300 Mn of additional capex to PCG's forecast. It remains unclear to what extent SRE will be able to return the Aliso Canyon asset to service.

Rebuffing the Trump Trade: California Poised to Raise Renewables Further?

We note a clear potential for California to pursue additional legislation under SB100 to expand the RPS to 100%, with an acceleration of the RPS for 50% to 2020, vs 33% originally. We emphasize this could re-accelerate some procurement for solar, which appears largely stalled for now given over-procurement.

Debate remains on the Community Aggregation Effort

We continue to perceive a clear and expanding debate on just how quickly communities will elect to migrate. We note the current ~4% of system load migrated could well expand in the next year towards ~15%, but the question is whether this will hit upwards of 50% as anticipated by initial interest indications. We note the current pace of reform does not appear slated to drive an increase in exit fees and ongoing tariffs until at least 2018. Credit Risk under these renewable deals remains critical too.

California Factors

What are the critical factors impacting the state from our latest regulatory meetings in the state?

- **Consumer rate inflation continues to garner close scrutiny:** We expect O&M reductions will remain a critical subject to EIX but also for PG&E as inflation on core customers is magnified by declining sales and the impact of adjusting the resi tariffs for the new rate structure after years of a freeze for the lowest customers. While PG&E remains largely committed to ~inflation like levels, this appears to have trended materially above this under certain tariffs in recent periods. Broadly, this is a risk and critical focus identified by mgmts.
- **Larkin substation outage:** We note some recent consternation in San Francisco around the recent Larkin outage with a portion of SG out of service. We could yet see this garner modest incremental attention.
- **Time of Use Rates:** This remains an ongoing critical question for PG&E and EIX, and less so for SDG&E given their high overall rates already. We note changes in TOU rate constructs in coming year across the state could well modestly reduce the NEM proposition. We emphasize this would impact not just resi tariffs but also the C&I opportunity for net metering, potentially more important from an aggregate MW impact.
- **Minimum Bills & Fixed Charges:** We believe fixed charges could yet increase to their maximum level at \$10/mo despite petitions from the utilities for yet higher levels. We note

minimum bills are largely already established for resi customers at this \$10/mo level (not to be confused with fixed charge prospects).

- **Solar procurement continues in various shades:** Despite having hit its RPS already, we note a variety of programs including Community Solar and Green Tariff initiatives continue to push for additional spend.

Solar Updates

The latest Run-Down on Solar, Suniva, and Cell Costs

We note industry representatives continue to see an expectation of a 201 tariff filing going into effect. Only last week the U.S. Trade Representatives' Office informed the WTO it was considering imposing emergency tariffs on crystalline silicon photovoltaic cells, regardless of their end product configuration; affirming the administration's alignment with the 201 filing, given that the U.S. Trade Representatives' Office falls below the executive branch.

We highlight significant optimism regarding further cell/module price reductions, with expectations on variable cell prices at around 20c/W for 400W panels by 2020. We note current prices around 34c/W for 72W panels (*and other datapoints anecdotally pointing to upwards of a ~\$0.10/W jump in panels in recent weeks on select US deliveries given the premium to deliver within the current year outside of tariffs, illustrative of the transient squeeze in pricing this year*). According to industry experts, price reductions should be primarily driven by efficiency improvements in regards to total watts per cell from 4W to 5.5-5.75W per cell (best case, but more likely commercial deployments will remain tied to ~5.5). Deflation will continue despite the transient uplift in US solar panel prices under any 201 filing implementation for a 3-4 year period. We suspect future deployment could well be delayed into ~2021+ as prices continue to decline and a strong incentive after tariff program expires, in contrast to existing ITC incentive to accelerate potential deployment. We flag the commence construction language implementation for solar is key here as qualifying sites will enable the continues deployment after formal 2019 expiration and into the period in which import tariff program would seemingly no longer be in effect.

With successful 201 filing, projected all-in solar build costs of \$0.75/W could yet rise meaningfully, albeit with the core expectation being for a panel price increase. Import duties would support pure U.S. solar products, but harm anyone producing outside of the United States, including Chinese producers, but also U.S. producers with parts of their supply chain outsourced to Mexico or Canada. Based on developer comments at the conference, such price increase could likely lead to the abandonment or renegotiation of PPAs scheduled for 2018/2019, as well as the demand for more flexibility on PPAs currently being negotiated.

Beyond the Suniva 201 filing, we note increasing concern surrounding curtailment, with buyers pushing developers to take on increasing curtailment risk. We note the current industry standard is for the developer to take on 50-100h of curtailment, with the remainder to be carried by the off-taker; however, buyers increasingly push for 200h, which is close to 10% of operating hours,

making the economics of projects difficult at current prices.

Private equity appetite for the sector remains elevated, with a broader expectations among many market participants we spoke with for a premium valuation vs. public markets. We flag expectations on discount rates remain near 7-9% levered, which is consistent with past datapoints. We emphasize the merchant tail of projects continues to also gain growing attention as PPA tenors grow shorter. Discussion of recontracting renewable deals with subsequent energy + REC products for longer tenors is also a growing component of focus in the sector given this could well shift the perceived long-term 'merchant' risks. Bottom line, we have seen pricing expectations fall off from previous high merchant expectations, but a steady bid from private valuations supports our more constructive view on the YieldCo sector altogether, albeit with clear bifurcation on risk of select portfolios (do they need to be broken up?) and potentially re-leveraging. We look for completion of various stated strategic reviews from both the major sponsors of CAFD and of ABY; this in turn could spur all the more interest in the likes of NYLD. We note that appetite for contracted gas generation remains equally robust, suggesting consistent cash flows remain at a premium rather than just renewables.

With regards to new renewable opportunities, we see meaningful interest in California, specifically Community Choice Aggregation and municipal utilities; with industry representatives considering as much as 50% CCA by 2020 as a reasonable possibility under SB100 (could this prove the next driver of meaningful procurement in the state?). On CCA, industry sees the main drivers being not only the economics, (i.e. under-pricing the IOU rates), but also the ability of self-control and the opportunity to increase renewable penetration beyond current RPS standards. We highlight counterparty creditworthiness as well as the risk of consumer defection as the largest challenges to expanding CCA.

Brief Company Blurbs

PG&E

Mgmt. remains positive despite CPUC safety concerns, points to service improvements and possible load growth driven by EVs—we remain sceptical.

Our conversation with PG&E mgmt. provided flavour on current issues surrounding the Norstar report on Safety Culture OIIs as well as possible ROE cuts and the denial of additional funding for the Diablo Canyon decommissioning fund.

Mgmt. highlighted strong customer service performance, as well as the recent focus on public and employee safety. We highlight mgmt views the Norstar report as “hurtful not helpful,”

stating they have completed approximately 2/3 of recommendations so far and are confident they can complete the remainder of the recommendations before next summer's hearings with the CPUC. Moreover, in regards to the announcement on potential ROE cuts (given the safety concerns), mgmt. interprets these as a fine to incentivize safety improvements, than a substantial threat to next year's cost of capital calculation. However, we view these statements rather cautiously, given the recent incident at the Larkin substation, where a fire cut electricity supply to over 80,000 PG&E customers in San Francisco.

In terms of Diablo Canyon, we highlight mgmt. remains little concerned by the CPUC decision to deny the request for decommissioning fund increases for Diablo Canyon, basing the decision on the lack of site specific cost estimates not, however, on a denial of further decommissioning support. In fact, PCG interprets state law to support their demand for further decommissioning funds, and pointed to Humble Bay where they received 100% of their request after providing site-specific cost estimates. We look for a site specific estimate process to kick off in 2018, with a conclusion several years thereafter.

We note mgmt. sees California electric vehicle targets as opportunity for significant load growth. Currently, CA governor Jerry Brown has set the goal of 1.5 million EVs by 2025, but the CA Air & Resource board recently announced that CA would need 4 million vehicles by 2030 to meet its GHG emissions' targets. According to PG&E, assuming 1.5 million vehicles by 2025 and 4 million vehicles by 2030 this would translate into approximately 1% CAGR over the next 15 years or about 1 million new customers.

Finally, we highlight recent decision to increase dividend to \$0.53 from \$0.49, resulting from decision to gradually increase dividend pay-out ratio to 60% by 2019, targeting an average y-o-y dividend growth of 8%. We note that PG&E dividend was previously below comps, thus, this move is positioning PG&E more in line with competitors in the sector than setting it ahead. The expectation remains that the DPS growth will continue at this ~pace through 2019 to hit this target

Avangrid

Mgmt highlights opportunities for both new transmission and generation not included in long-term outlook

We note additional \$2 billion in capex possibilities over the next few years not included in long term outlook. These include three transmission projects in New York and two in Maine, including opportunity of building transmission line to Canadian border to connect with Hydro Quebec. There, mgmt. is considering expanding the proposed MCPC transmission project to extend to the Canadian border. We see this as possible alternative to Northern Pass in bringing Hydro Quebec electricity into MA for the MA RFP, and note that AGR already has the right of way for the entire route to the Maine-Canadian border. In New York, we note three possible transmission RFPs: Western NY, Connect NY, and NY Transco. AGR has bid into Western NY

and NY Transco RFP, with final decision expected in 2H 2017 and 1H 2018 respectively. We highlight Connect NY, where no RFP has been filed yet, but which could possibly include 200+ miles of underground transmission running from Ithaca to NYC along the New York Thruway (remains quite challenging in our view). Again, no final decision has been made on these RFPs, but we see meaningful upside on announced long term capex if mgmt. can execute on opportunities.

We note AGR's strong pipeline of new renewables projects, again with meaningful opportunities to exceed current guidance. According to mgmt., AGR has safe-harbored over 2 GWs of wind turbines in 2016 to keep 100% PTC – approximately 2 GW of wind as well as around 370 MW for repowering. Mgmt. plans to pull down on those through planned generation projects between 2017 and 2020. We emphasize though that currently AGR only has plans for approximately 1.8 GW of projects. Thus, again there is additional room for about 1 GW of new wind generation, if mgmt. can execute.

We note mgmt. focus on decreasing merchant exposures to reduce volatility--2016 merchant exposure was at 38%. To execute on those mgmt. plans all new projects contracted, as well as re-contracting existing merchant as well as expiring contracts. Current guidance sees merchant exposure decrease to 31% by 2020, not including effects of re-contracting current merchant.

We note mgmt. has no near term acquisition plans, seeing most merger opportunities likely dilutive to their anticipated 8-10% growth rate. However, mgmt. does not rule out any mergers should an attractive deal come along. We note such opportunity would have to be renewables focused, with similar growth rate and investment grade rating. In regards to AGR's gas storage, mgmt. seems keen to divest of the assets if possible, as they no longer align with company strategy.

Eversource

We leave California with little confidence in the execution of Access Northeast and only modestly more for Northern Pass. However, we note possibility of offshore wind project with DONG could provide some much needed capex offsets. The size of this project remains unclear. The question is just what other more conventional capex alternatives remain?

Given our conversation with ES, we see Access Northeast as pretty much dead without MA legislation changes. On Northern Pass, we see the payout battle continuing. The most recent status update is that the NH committee is completing its final review, which would likely provide a written order on the project by the end of Sept 2017. After which, the project must then receive federal approval which will likely correlate closely with the state's decision. We note that the project, which intends to bring electricity from Hydro Quebec into New England, likely faces competition from Avangrid which is considering similar project in Maine. We note mgmt. provided little more insight on possible JV with DONG on offshore wind. Final MA RFP is expected June 30th, with final winners to be announced likely in June 2018. ES expects to bid in 400 MWs, and is relatively confident on success in the auction. Should they receive the bid,

mgmt. expects construction to begin in 2022.

Pattern Energy

Main unknown remains related to the DevCo investment

The main unknown for the stock remains the magnitude and scope of the DevCo investment. While more specifics have yet to transpire following the publication of the White Paper (see our related note here), mgmt. reiterated that an investment would remain below the \$100 Mn mark, while an unconditional and ongoing capital call requirement would be unpalatable. We expect a more formal view on the Analyst Day.

Expect more details on cost cutting at the June 29th Analyst Day

We expect more clarity on the cost cutting initiatives at the upcoming Analyst Day in NY, both on the O&M and the SG&A front. On the O&M side, mgmt. believes it can generate \$10-20k in annual O&M savings per turbine as it renegotiates the terms on the OEM agreements with Siemens and GE, and moves towards self-performing maintenance in the longer-term. Given the fleet of 1,100 turbines, this would translate into ~\$10-20 Mn of total savings. Additionally, as the company develops its own maintenance expertise, we could eventually see a potential to earn asset management fees from 3rd party assets; this would diversify revenue streams and could allow the company to supplement growth in case capital markets remain constrained. On the SG&A side, mgmt. remains confident it can reduce overhead over the next few years, although it indicates a true peer comparison is difficult because of the nature of the PEGI model (operating company vs. subsidiary of a larger entity e.g. NEP and NYLD) as well as the lack of clarity and comparability over cost allocation. Overall, we emphasize any meaningful cost saving would be substantially accretive to the stock as it would flow directly to CAFD: \$20 Mn in recurring, annual cost reductions would translate into ~\$3/Sh assuming an 8% CAFD yield.

How to fund growth?

Mgmt. remains reluctant to issue equity at current levels and expect the next drop down to be funded via the revolver. This remains a short term form of financing, with the more permanent source of capital expected to be funded through equity and parent debt, with a targeted 2:1 equity-to-debt ratio. While the RCF availability is back to ~\$400 Mn as the company paid the facility down following the senior note issuance in January, we note credit metric constraints could limit PEGI's ability to fully draw on the revolver. If additional liquidity is needed to fund a project, mgmt. notably remains open to partnerships, where an investor (likely a pension fund) would take a minority equity stake in the project.

Atmos Corp.

Mgmt. indicated that most of the items in its Jan rate case filed with the TX Railroad Commission had been unchallenged, including its request for recovery on \$1.3 Bn of CapEx,

with the main source of debate remaining the allowed ROE. Mgmt. also highlighted that the vast majority of its cost recovery filings are annual mechanisms vs. rate cases, which has allowed the company to dramatically reduce lag and grow rate base at its targeted 9-10%; indeed, the company is able to recover ~95% of its capital spend within 6 months of test year end, and 99% within 12 months.

El Paso (Unrated)

The company increased its dividend last week by 8%, with a target to increase the payout ratio to 55-65% by 2020. In the TX rate case filed in Feb, we highlight testimonies are expected by the end of this month, mgmt. noted its attempt to treat its rooftop solar customers as a separate customer class has garnered a lot of attention in the case despite its negligible size and impact. The company further emphasized its best-in-class load growth justifies the need for further generation resources (mostly gas plants), which would need to remain within or close to its service territory due to local constraints. Mgmt. also highlighted that the company remains carved out of the recent legislation on AMI in TX, but could see a push towards implantation of smart meters in the future, highlight potential upside to its capex plan.

Black Hills Corp. (Unrated)

Mgmt. stated it would continue its current strategy of pushing out rate cases for the next few years (first ones in 2019, and more meaningful cases in 2020 & 2021) as it manages earned ROEs after the close of its Source Gas case. The cadence of the absorption of these benefits dictates rate case timing, but also limits the ability to meaningfully reinvest capex for ratebase growth, instead focusing on cost cutting and efficiency measures in the near term.

On Capex, mgmt highlights the upcoming wind RFP in CO, which BKH expects to win via a separate third party affiliate bid, which could provide an additional \$100 million, currently not included in guidance. We note BKH needs more wind to meet its 30% renewable requirement in the state. Also on CO, mgmt. provided a little more insight on their proceedings at the CO PUC (scrutiny surrounding gas-fired Pueblo plant), announcing that as BKH's request for rehearing was denied; they plan to address the issue in court.

On Cost of Service Gas, we note mgmt. provided little update besides affirming the ongoing consideration of the project having already delayed filings into ~3Q from 2Q. Mgmt. also restated its desire to exit E&P business within the next three years. Finally, mgmt. suggested it is looking to refinance much of their near term (2020) outstanding debt obligations in 2018.

[Please Click Here for the Full Note](#)

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Bitter Reaction as Trump Bails on Climate Accord

257 U.S. Mayors Beg to Differ

By Randy Rodgers
Publisher & Executive Editor

Some of the 257 U.S. mayors, members of the Mayors National Climate Action Agenda, who recently released an open letter to President Trump to oppose his actions thus far against climate action.

The sustainability community erupted with nearly universal dismay, outrage and resolve in the face of President Donald Trump's

decision to pull the United States out of the Paris climate agreement

promise, pitting his administration against the 71 percent of U.S. citizens who believe climate change is a clear and present danger, and joining only the countries of Syria and Nicaragua in defiance of the accord, which was signed by nearly 200 nations.

The administration's official website at WhiteHouse.gov claims the Paris deal "created a taxpayer funded U.N. climate slush fund," an idea made popular by conspiracy theorists who believe the United Nations' effort to combat climate change is a veiled attempt to erode American sovereignty. Citing disputed facts about the cost in jobs and the "negligible" environmental benefits of the pact, Trump said the Paris Accord was "negotiated badly" by the Obama administration and imposed unrealistic carbon reductions on the U.S. "while giving countries like China a free pass for years to come."

In justifying his decision, Trump famously said, "I was elected to represent the citizens of Pittsburgh, not Paris." That statement ignored two important facts: 1) In the 2016 presidential election, Hillary Clinton won 75 percent of the vote in the city of Pittsburgh; and 2) Pittsburgh and Paris are actually on the same planet, which is really what the Paris Accord was all about.

[Read More...](#)

True North: Make your health plan more sustainable! [Click here for more information.](#)

Latest News

Cities Selected for Equitable Economic Development Fellowship

WASHINGTON – National League of Cities, PolicyLink and the Urban Land Institute announced the selection of six additional cities for pa...

APPA, National Lab to Improve Electric Reliability

WASHINGTON -- The American Public Power Association has signed a Memorandum of Understanding with the Lawrence Berkeley National Laborat...

NY to Help Farmers Cut Energy Costs and Utilize Clean Energy

ALBANY, N.Y. -- Governor Andrew Cuomo announced the release of a comprehensive strategic plan to help farms across New York State cut energy c...

DOT Announces \$527 Million in Infrastructure Grants to

Elaine L. Chao announced the Federal Aviation Administration will award \$527.8...

CaGBC launches Canada's first Zero Carbon Building Standard

VANCOUVER, B.C. -- The Canada Green Building Council has taken a major step toward achieving Canada's climate change commitments with the laun...

Blue Accounting to Protect Great Lakes Source Water

ANN ARBOR, Mich. -- The Great Lakes Commission recently brought together water professionals from around the Great Lakes basin to discuss regi...

Suez. Ready for the resource revolution - [Learn more at Suez-na.com](#)

Energy Department Adds \$20 Million in Research Awards

WASHINGTON -- The U.S. Department of Energy announced it is honoring additional commitments to 10 previously selected Advanced Research ...

EPA: Atlanta Area Attains 2008 8-Hour Ozone Standard

ATLANTA -- The U.S. Environmental Protection Agency announced that it is taking final action to approve the state of Georgia's request to...

Energy Department to Fund 19 Tribal Energy Projects

WASHINGTON -- The U.S. Department of Energy Office of Indian Energy Policy and Programs announced funding for 19 Indian tribes to take t...

EPA Brownfields Cleanup Funding Announced for Earth Conservancy

WASHINGTON -- The U.S. Environmental Protection Agency selected 172 communities and organizations across the country including Earth Con...

Practice Greenhealth and ACCO Announce Partnership

WASHINGTON -- Practice Greenhealth is constantly looking for

Online Course

Lean Thinking: Process Mgmt Made Easy

Sustainable City Network and NWETC have teamed up to offer this 6-hour online course June 20-22 on the Lean process improvement system.

This course will challenge your ideas about how you think about and evaluate the work you do.

Our Lean Master

ways to enrich your experience as an organizational member. One way is by c...

Adventist Health System Receives Gallup Great Workplace Award **ACE to Improve Energy Efficiency at Federal Facilities**

ORLANDO, Fla. -- Adventist Health System has been named a 2017 Gallup Great Workplace Award winner. This marks the seventh consecutive year th
DALLAS -- Lockheed Martin has been selected for a U.S. Department of Energy contract to improve energy and water efficiency at federal...

HHS Announces Over \$70 Million in Grants to Address Applied Medical's Nearly Three Megawatts of Solar Opioid Crisis

RANCHO SANTA MARGARITA, Calif. -- Applied Medical, a developer and provider of minimally invasive surgical devices, announced the availability of more than \$70 millio...
WASHINGTON -- U.S. Department of Health and Human Services Secretary Tom Price, M.D., announced the availability of more than \$70 millio...

Econolite Introduces EOS Traffic Control Software

ANAHEIM, Calif. -- Econolite recently introduced EOS traffic controller software. EOS is a next-generation, easy-to-use, web-based user interf...

Orion Lighting to Upgrade VA Hospitals to LED Lighting

MANITOWOC, Wis. -- Orion Energy Systems, a designer and manufacturer of high performance, energy-efficient LED retrofit lighting products, ann...



Vol. 23: Read it now

certified instructor, Brion Hurley, is principal Lean consultant at Rockwell Collins. He will introduce the history of Lean concepts, derived from the Toyota Production System,

and explain how
and why they have
come full-circle
back to the United
States.

Results of Lean
initiatives have led
to increased
customer and
stakeholder
satisfaction,
reduced costs,
reduced risks,
increased sales,
and more flexible
and agile
organizations.
Perhaps the largest
benefit has been
more engaged
employees, where
people enjoy the
work they do.

Examples of Lean
successes can be
found within city
and state agencies,
utilities, nonprofits,
law firms, military,
public schools,
startup companies,
movie studios and
even farming!

[Read more...](#)

Online Course

Creating a Sustainability Strategy

Sustainable City
Network will present
a webinar series in
July for any
personnel who are
responsible for
developing
sustainability plans,
greenhouse gas
emission
inventories, climate

Sustainable City Network operates a website (www.sCityNetwork.com), customized e-newsletters, online training, conferences and other interactive tools dedicated to providing quality and timely information on sustainability products, services and best practices to business, government, education and healthcare.
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The 6-hour online course, Creating a Sustainability Strategy for Your Organization, will be delivered live on July 11-13. Sessions will be recorded so registrants may attend live or via on-demand streaming video.

This course, featuring veteran instructor Antonia Graham, will focus on the implementation and strategic thinking that is required to implement a Sustainability Plan. This course will teach you how to incorporate storytelling and systems thinking into a strategic plan that gets your plan implemented and enables you to move the needle further and faster to create a more sustainable community.

This course will be presented in three 2-hour sessions held on consecutive days, July 11-13. (Group rates available on the registrations page.)

Sustainable City Network operates a website (www.sCityNetwork.com), customized e-newsletters, online training, conferences and other

government, education and healthcare.

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From: Workforce Requirements for Exec Order Workshop
Sent: Tue 6/6/2017 2:32:30 PM
Subject: [SPAM] Learn from 10 Gov Leaders: Workshop to Implement EO Workforce Requirements

**Workforce Requirements
of the President's
Executive Order 13781
Training Workshop
June 28, 2017**

Confirmed Speakers

**Terry Gerton
President & CEO
National Academy of
Public Administration
(NAPA)**

**Bob Corsi
Secretary of Board of
Directors
Senior Executives
Association (SEA)
Former Assistant Deputy
Chief of Staff for
Manpower, Personnel and
Services
Headquarters, U.S. Air
Force**

**Rebecca Ayers
Performance Management
Solutions, OPM**

**Tom Gilbert
Assistant Director of
Strategic Issues, GAO**

**Deb Tomchek
Former Director of Human
Resources (HR)**

DOJ and DOC

Jim Read
Director, Policy and
Evaluation
Merit Systems Protection
Board

Jeffrey Neal
Senior Vice President, ICF
Former CHCO at DLA and
DHS

Lou Kerestesy
Founder & CEO
GovInnovators

Mika Cross
Federal Workplace Expert

**Not Just Human Capital -
Please Review and Forward to
Your Government Executives,
Managers and Staff
Who Play a Part in Meeting the
Workforce Requirements of the
President's Executive Order**

Potomac Forum Training Workshop

**The President's Executive Order:
How to Meet the Workforce
Requirements of the
President's Executive Order
13781
Training Workshop**

***What Federal Executives, Managers,
and Supervisors Need to Know
to Support the Goals of the Executive
Order for
Reforming the Federal Government
and
Reducing the Federal Civilian
Workforce***

**Date: Thursday, June 28,
2017**

Sponsored by:

Potomac Forum, Ltd.
the leader in high quality training since 1984

www.PotomacForum.org
(703) 683-1613
info@PotomacForum.org

**Location of Workshop:
Willard InterContinental Hotel
Washington, D.C.**

**Potomac Forum Training Workshops
are 100% Educational
and NOT Sales or Marketing Events**

**The Press is Not Permitted to
Encourage
Candid Discussion in our 100%
Learning Environment**

Overview:

The president issued an executive order (EO) on March 13, 2017 which requires agencies to plan and implement long-term workforce reductions and incorporate the plan as a government-wide workforce priority into their Agency Strategic Plan and/or Human Capital Operating Plan.

This Potomac Forum training workshop for government will provide information for agency executives, managers, and staff to respond to the EO.

Experienced human capital executives and experts will share their insight and experience in developing and implementing long-term and near-term workforce management practices that will help attendees understand how best to improve performance, increase accountability, and reduce costs.

This workshop will provide you with practical, easy-to-implement tools and resources to help you achieve the best results through your agency's efforts to restructure, reshape and eliminate inefficient functions to achieve the goals of EO 13781 while enhancing employee performance to increase mission efficacy and increase retention.

What You Will Learn:

- **A framework to plan for reorganization and functional consolidation**
- **Avoiding common pitfalls to managing performance and**

conduct in the modern workplace

- **Where to find practical support mechanisms, resources and help for managers and supervisors**
- **How to prepare the workforce for activities in cost cutting, reshaping, reducing, and reorganization**
- **Managing change through effective internal and external communications**
- **Driving positive outcomes by leveraging the Federal Employee Viewpoint Survey Results into actionable steps that help cultivate an inclusive culture designed to retain top talent and optimize employee potential**

Why You Should Attend:

- **Learn proven management strategies to demonstrate return on investment, cost savings, and enhanced management efficiencies from developing an effective long-term workforce reduction plan**
- **Understand how to leverage alternative service delivery models and streamline mission support functions to provide greater efficiency while improving quality**
- **Maximize employee performance by focusing on concrete steps to increase performance and effectively deal with poor performers**
- **Optimize employee recognition programs designed to recognize, reward and retain top performers**
- **Build your toolkit for cultivating a culture of engagement and accountability designed to achieve enhanced organizational and individual performance**

Who Should Attend:

- **Federal supervisors and managers**
- **Federal HR practitioners and anyone responsible for implementing agency restructuring plans**
- **Inspector Generals and Staff**
- **Federal employees or members of employee affinity groups**
- **Communications practitioners responsible for leading change management and internal communications campaigns**

Format:

Lecture, guest speakers, and practical exercises.

CEUs Awarded Upon Workshop Completion

Press is NOT Invited to Register or Attend

"Send-A-Team" Registration Fees

No Press to Promote Candid Discussion

Registration and Information:

www.potomacforum.org

Call: (703) 683-1613

Info@PotomacForum.org

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Sent: Tue 6/6/2017 2:17:54 PM
Subject: Newsletter: Flash Sale - 50% OFF, New Product Releases, PowerShell and more!



NEWSLETTER
June 2017

New Product Releases to Boost SQL Security & Compliance

SQL Secure v3.1

Automate SQL Server user permission analysis to discover risks

What's new in v3.1?

Cloud-specific capabilities for Azure-hosted SQL Server databases

Expanded Security Check coverage for data protection, and firewall rules

Perform audits on Azure SQL Database and Azure Active Directory

[Learn More →](#)

SQL Compliance Manager v5.4

Track and manage database compliance quickly and easily

What's new in v5.4?

Monitor and audit SQL Server Extended Events for SELECT and DML events

Find sensitive data for audits with integrated sensitive column search

Additional console functions are now available via the web interface

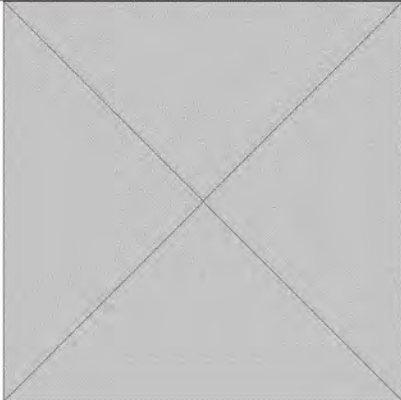
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Fresh Ink - Free Whitepapers:

Understanding Database Backup Strategies

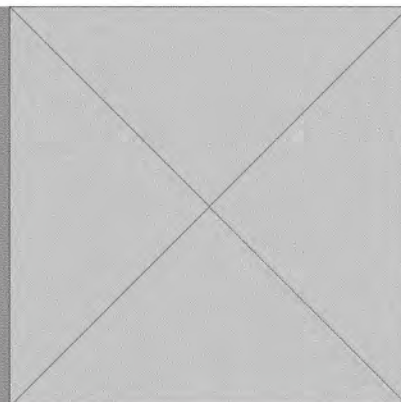
In this whitepaper, Pinal Dave describes some of the basic fundamental building blocks of working with backups.

Download Now →

SQL Server Security Practices

This whitepaper, reviews common security practices for implementing security measures within a SQL Server deployment and outlines the security features introduced with SQL Server 2014. **Download Now** →

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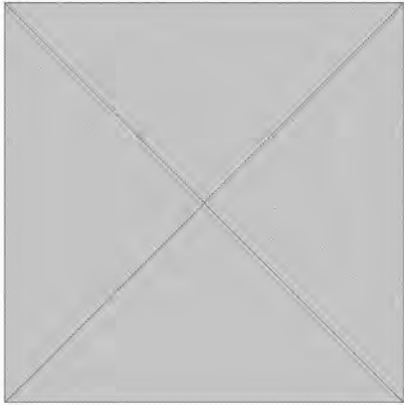
Auto-pilot SQL Server index defragmentation

Save 50% on SQL Defrag Manager when you buy online.
Hurry - this deal ends June 30!

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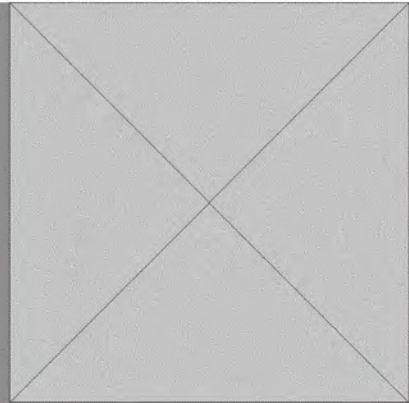
Discover 10 Lesser-known Capabilities of SQL Diagnostic Manager [Read Now →](#)

Configuring Custom Ports to a SQL Server Instance [Read Now →](#)

How to Run an Application Under an Account of a Different Domain [Read Now →](#)

Database Migration Made Easy [Read Now →](#)

Take PowerShell To

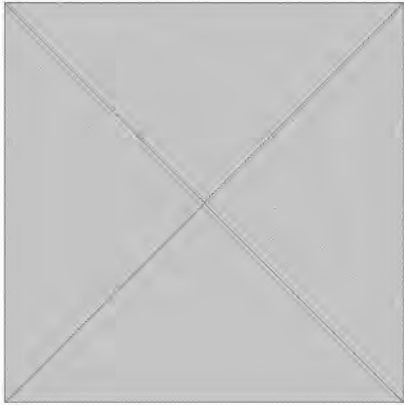


The Next Level with SQL Diagnostic Manager

Combine PowerShell and SQL Diagnostic Manager to proactively monitor SQL Server performance, set up predictive alerting, troubleshoot via expert recommendations, and more. [Learn More →](#)

Try SQL Diagnostic Manager for FREE

Boost your knowledge of PowerShell - visit our [resources page](#) to learn more.



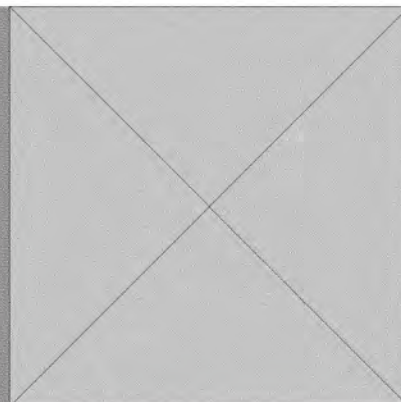
Quack Chat:

Fix Database Performance Problems with Profiling

DBAs often encounter poorly performing SQL, missing or incorrect indexes, and hot database objects in their databases. No matter how hard the DBA may try, something outside the planned norms will eventually occur and then performance will suffer. Join this webinar to learn how DB Optimizer can run a profile on a database and use it to find and fix performance problems.

Tuesday, June 27 @ 11am-12pm CDT |
[Register Now](#) →

Want to test drive [DB Optimizer](#) before the webinar? [Start for FREE](#) →

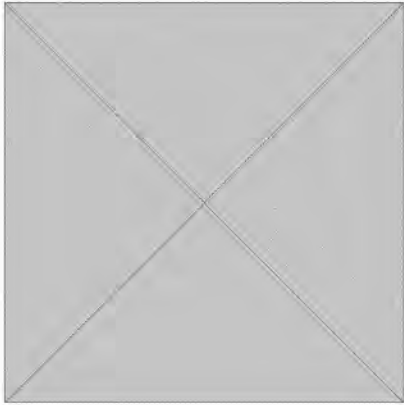


Infographic:

Top 5 Backup Mistakes

It's all fun and games until your backup fails. Are you walking the disaster recovery tightrope without a net? Check out this infographic to find out!

[View Infographic](#)



Webcasts on Demand:

Introduction to Performance Tuning in Azure SQL Database

Host John Sterrett, Microsoft MVP, covers the new features in Azure SQL Databases. Plus, he'll explain how Azure measures performance with DTU's and how DTU usage can impact data loads, migrations, and your daily workload. [Watch Now →](#)

Monitoring SQL Server

Windows and SQL Server expose thousands of instrumentation points. This video covers the most useful ones to capture, how to capture them, and how to do it without taking down the server you're monitoring. [Watch Now →](#)

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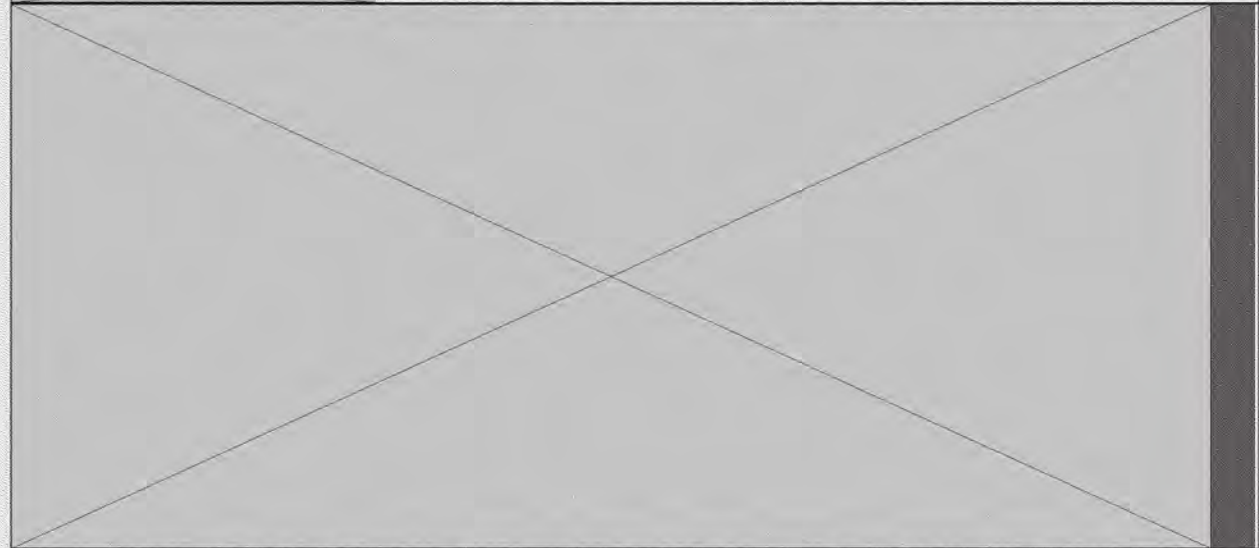
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From: Thales
Sent: Fri 6/2/2017 11:10:49 AM
Subject: [SPAM] Is your data secure in the cloud? Register now and learn about multi-cloud key management

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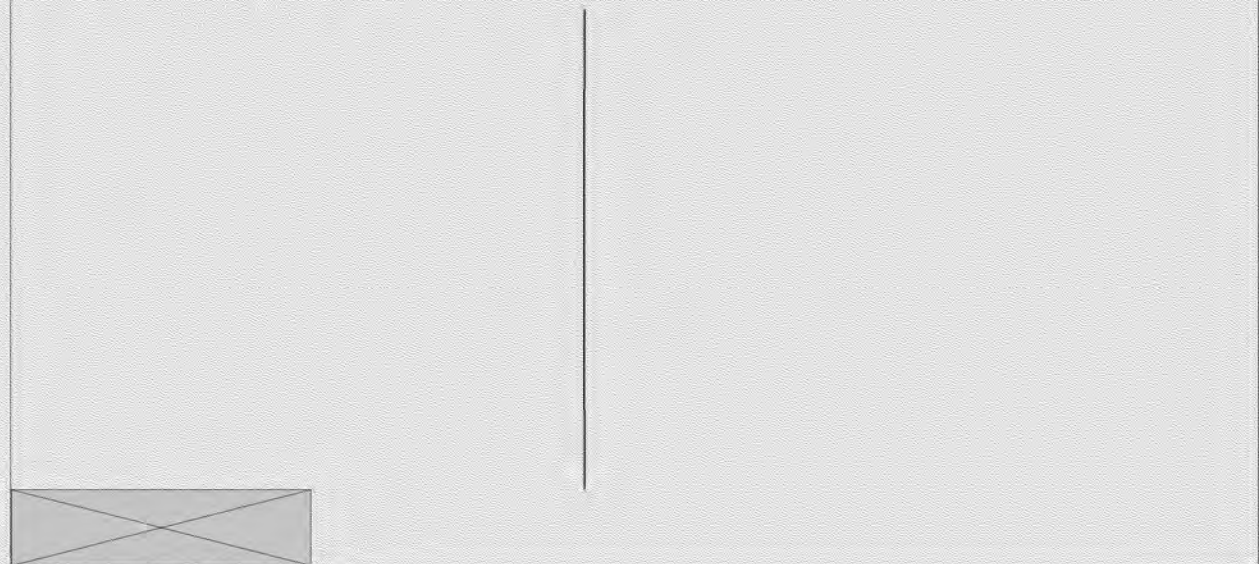


As customers adopt cloud services, they need not abdicate control over their data security to their cloud vendor. Companies that face regulatory requirements need better than 'default' security; they require more control and higher assurance levels than the out-of-the-box key management provided by their cloud vendor.

In this webinar, we'll will discuss challenges specific to multi-cloud key management.

Join our webinar and learn:

- Different approaches available for key management in the cloud
- How to select the right strategy from the many possible combinations
- What to look for in a key management system



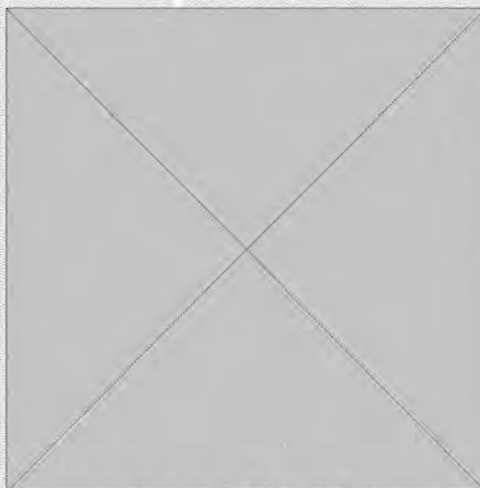
Webcast Details

Date:
June 6, 2017

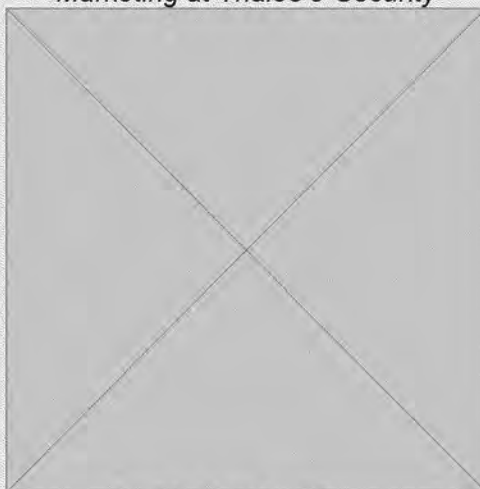
Time:
11AM PT / 2PM ET

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Speakers



Vikram Ramesh
*Sr Director of Solutions and Partner
Marketing at Thales e-Security*




Adrian Lane
CTO
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Subject: GDPR: Don't Stop at Compliance



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[WEBINAR] GDPR & CUSTOMER IAM: Don't Stop at Compliance

Got customers in Europe? Then you will want to know all about GDPR, General Data Protection Regulation, that goes into effect in less than a year. This means if you are an organization that sells or markets to, or for that matter, collects any personal data of European citizens, you have one year to come into compliance or face fines up to 4% of annual global revenue or 20 million Euros, whichever is greater.

Critical to this compliance is security, data-access governance and transparency in the collection and use of personal data for European citizens, including use-based consent, self-service personal data management, and data encryption in every state (at rest, in motion, in use).

Customer identity and access management (Customer IAM) solutions provide key capabilities that help meet GDPR requirements 'out of the box', while also providing a single, unified view of the customer, building trust, and enabling secure, seamless and personalized customer engagement.

REGISTER HERE to see how Ping Identity's leading Customer IAM solution can enable your organization to meet GDPR requirements and transform a compliance challenge into an opportunity to get closer to your customers.

Best Regards,

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From: Drobo
Sent: Tue 6/13/2017 8:25:23 PM
Subject: FREE 1TB With 5N2 for Dads and Grads!

Prepare Your Dad and Grad for the Future

Protecting your projects and data is crucial, however, it shouldn't be a complicated task. Drobo's newest addition, Drobo 5N2, is perfect for simply storing and protecting data over your network. It provides simplicity, security and expandability using Drobo's award-winning BeyondRAID® technology.

The 5N2 is also compatible with DroboApps, DroboAccess and DroboPix. DroboAccess allows you to access, upload and share data on your Drobo remotely, using end-to-end encryption. DroboPix automatically syncs your mobile device's pictures and videos directly to your Drobo.

Flash Sale! Use Code: FREETB

FREE IronWolf 1TB NAS HDD Included With Every Purchase of Drobo 5N2

*While Supplies Last, US Drobo Store Only, Drives Ship Separately.

Questions? Please email sales@drobo.com or call 1.866.997.6268

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Drobo
Sent: Wed 6/7/2017 7:38:49 PM
Subject: The Two Year Mark- Letter from Drobo CEO, Mihir Shah

The Two Year Mark - Drobo CEO Letter

Dear Valued Customer, Partners, and Drobots,

May 15, 2017 was a big day for Drobo. It marks the two-year anniversary of Drobo as an independent company and my two-year journey as CEO.

I want to take this opportunity to express my sincerest gratitude to all who have made this journey exciting and share my reflections over the past 2 years.

Two-Year Highlights

At Drobo, simplicity is at the heart of everything we do. Over the past two years, we have launched 5 new products, including the B810n, B810i, 5Dt, 5C, and 5N2. These innovative products are based on our patented BeyondRAID® software, providing storage easy enough for anyone to use.

We also launched a series of DroboApps to make your life easier. DroboAccess turns your Drobo into your very own private cloud and DroboPix secures, protects and wirelessly transfers your phone's photos and videos to a Drobo NAS, while eliminating those pesky, monthly charges from your cloud storage provider. We also integrated our DroboDR (DR = Disaster Recovery) technology to our consumer product line, allowing a seamless backup from your primary Drobo to a second off-site Drobo.

In addition to products, we are implementing improvements to customer support and enhancing the overall customer experience. I am proud to say, all of the Drobo products, starting from the 5N2, will now include a standard two-year warranty, which doubles the previous warranty. While we have made tremendous strides in the customer experience, there is still much work to do in this area. I am extremely focused on this aspect of the business.

We have made tremendous investments in expanding our business overseas, including hiring sales people, recruiting business partners, and providing local level translations of our software and marketing campaigns. As a result, we have seen significant growth in Europe, Japan, India and China.

Looking Forward

I am extremely proud of our accomplishments, as we are committed to delivering the products and experience that is expected of Drobo. There is no doubt we have experienced ups and downs over the last 2 years in this journey, however, our successes would not have been possible without the support of our fans, customers, partners, and team members. For this, I express my deepest gratitude.

Drobo Blog

sales@drobo.com

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Subject: Weekly must-reads from Folio:

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A recap of this week's top stories:

1. **[Bloomberg Hires Former Havas Creative CEO — People on the Move](#)**
Betty Wong Ortiz named first female EIC of Runner's World, The Cut's Stella Bugbee promoted, and more...
2. **[Folio: Honors the 2017 Top Women in Media](#)**
Eighty-five women from across the media space recognized for creativity, achievement, and bringing the industry forward.
3. **[#TBT: Scenes From Business Media Summits Past](#)**
A collection of photos of our much younger selves, as well as some who left us too soon.
4. **[Randall-Reilly Sold to PE Firm](#)**
The well-known B2B player serves the trucking, construction and agricultural markets.
5. **[The Newsstand Takes Another Tumble in Q1 | Industry Notes](#)**
Glamour taps WaPo's Ashley Parker as contributing editor, and Charlie Hebdo courts controversy once again...

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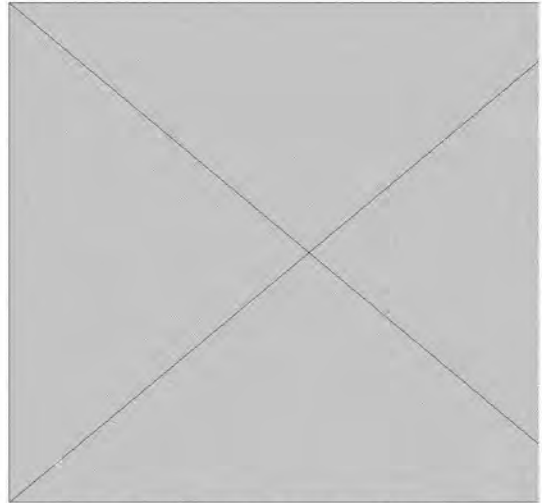
It's the largest gathering of magazine and digital media executives! Join us for strategies and tactics in deploying smart marketing, creating compelling content, powering up events, streamlining ad ops, and boosting sales. **Register Now.**

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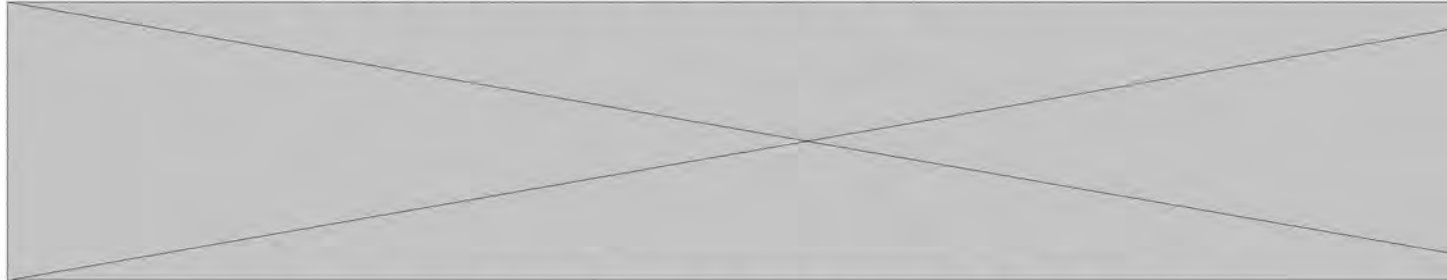
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From: DRV Technologies
Sent: Tue 6/13/2017 8:03:04 PM
Subject: Your eGuide - What you should know about IBM i Paperless Report Distribution

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Getting reports from the IBM i (formerly AS400, iSeries) to users in a format they can use like PDF and Excel can be a real challenge.
That's where Paperless Report Distribution can help.

Learn how you can start implementing Paperless Report Distribution today

Get the eGuide: What You Should Know About Paperless Report Distribution
In this eGuide you will find:

- What is Paperless Report Distribution?
- Benefits of Paperless Report Distribution
- Configuration List for Paperless Report Distribution for the IBM i
- Some Myth Busting About Paperless Reporting Solutions

Get your copy of the paperless Report distribution eGuide.



Brought to you by DRV Technologies, developers of SpoolFlex for converting IBM i spooled files to PDF and Excel with automated report distribution and archiving.

Sincerely,

Paul Allen
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Sent: Sat 6/10/2017 1:02:34 PM
Subject: Best practices for congressional investigations

(ASSOCIATED PRESS)

NEW REPORT: **Best Practices for Congressional Investigations**

A breaking national scandal often results in a call for an independent investigation to understand the situation and the ramifications for the country.

When it comes to Congressional committees tasked to perform major federal-level investigations, success is dependent on many factors.

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Trump's Ethics Pledge Is Paper-Thin

The full picture of potential conflicts of interest in the administration is far from clear due to vague definitions, loopholes, and decades-old systemic weaknesses in the federal government's ethics system, according to POGO's investigation.

[Read more](#)

More Trump Appointees Get Waived Past Ethics Pledge

The Office of Government Ethics posted waivers to the ethics pledge for 10 Trump appointees after demanding them from federal agencies.

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Considerations for Working with Whistleblowers in a Technological Age

The prosecution of NSA contractor Reality Leigh Winner and how the Department of Justice identified her as the alleged source provide a number of lessons for sources and journalists who seek to anonymously disclose information.

[Read more](#)

The US Military's Iran Connection?

A new POGO investigation details troubling allegations that the chairman of a huge logistics contractor supporting the U.S. military in the Middle East has been involved in illicit money laundering and defrauding investors.

[Read more](#)

Take Action: Strengthen Foreign Lobbying Laws

It's clear that the public needs to know more about how foreign powers work behind the scenes to influence US policies. Contact your representative to make reforming foreign lobbying laws a priority.

[Mark your calendar: Contact your representative](#)

POGO in the News

The New York Times

Lobbyists, Industry Lawyers Were Granted Ethics Waivers to Work in Trump Administration

"Filling the administration with lobbyists and industry officials isn't going to drain anything but taxpayers' patience," said Scott H. Amey, general counsel at the Project on Government Oversight, which requested copies of any waivers or recusals from 54 federal agencies, echoing the requests submitted by the Office of Government Ethics.

The Wall Street Journal

Where Have All the Inspectors General Gone?

According to the Project on Government Oversight, the Interior Department has been without a

permanent inspector general since Feb. 23, 2009. The vacancy at the CIA dates to Jan. 31, 2015.

Reuters

Podcast: How the Pentagon's wasteful budget hurts the military

Dan Grazier, former Marine Corps captain and Jack Shanahan Fellow at the Project On Government Oversight, talks about bloated budgets and blank checks hurt military readiness on Reuters' *War College* podcast.

New Republic

Trump's War on Oversight

"A dedicated and independent inspector general is an invaluable resource not only for the agency it serves or the Congress it reports to, but for the American people," says Danielle Brian, executive director of the Project on Government Oversight, a nonprofit watchdog organization. "Often the unsung heroes, IGs are essential to a well-functioning federal government."

Roll Call

The Levin Legacy: Next-Gen Congressional Oversight

"A lot of the oversight is done by unsung heroes," said Justin Rood, who leads the Congressional Oversight Initiative at the Project on Government Oversight, or POGO.

Government Executive

Democratic Lawmakers Protest Trump Telling Agencies to Ignore Their Requests

The nonprofit Project on Government Oversight, which analyzed the Justice memo in a Friday blogpost, noted that both parties have invoked such Justice Department guidance going back to 1984.



Project On Government Oversight (POGO)

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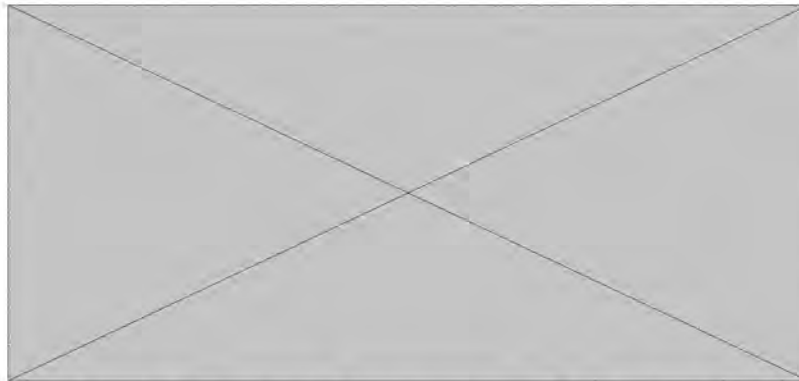
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Free webinar June 7 @ 11 am EDT



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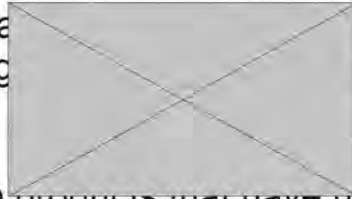


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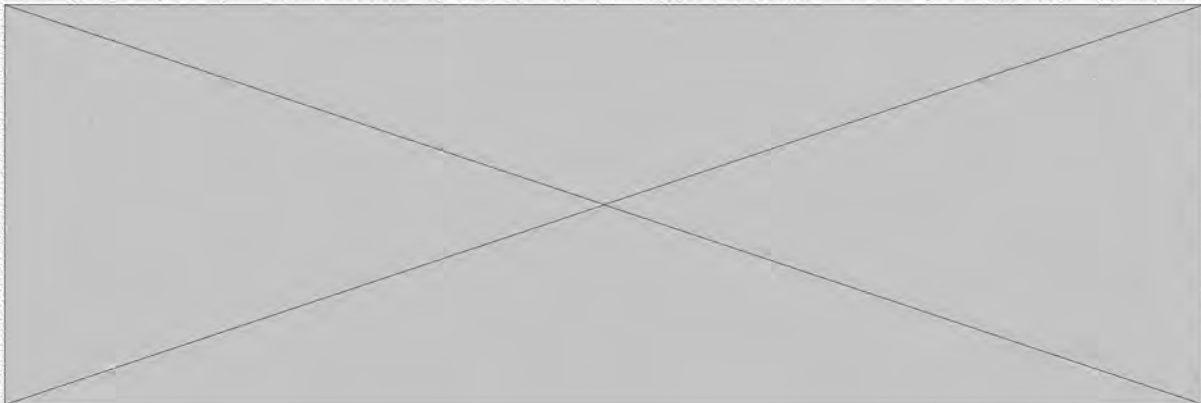
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July 12th Webinar

July 12th Webinar



Mike

Every industry is going through digital transformation and the pace has never been quicker. If you are an Enterprise Architect this is an opportunity for you to shine. Analysts agree that EA tools must undergo major changes to better support decision making. To be successful EAs need to be more efficient, better connected, and tightly integrated. A simple modeling tool won't cut it.

Join Jason White, Senior VP of Solutions Consulting and Jeff Ellerbee, EA Solutions Marketing Manager as they talk about the key software capabilities that will help EAs take advantage of this opportunity.

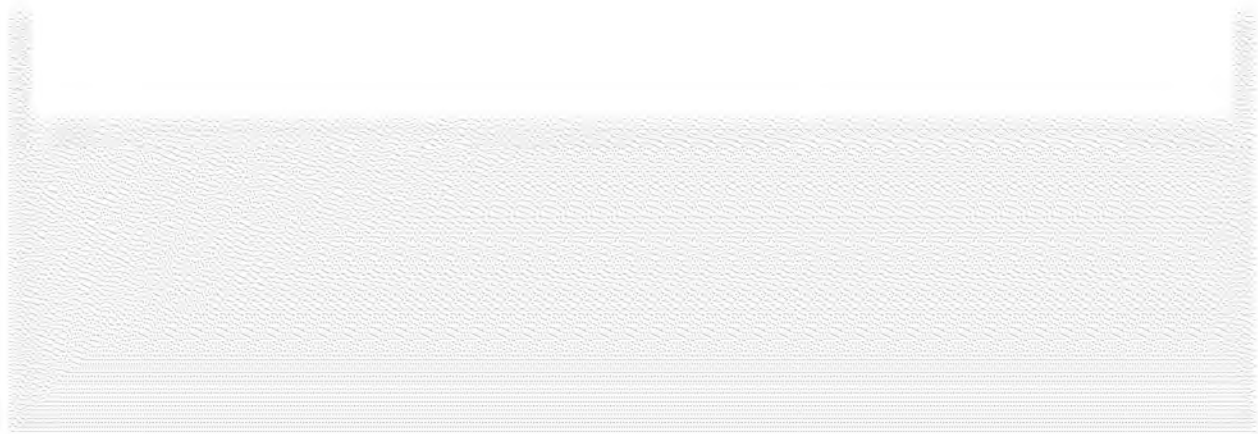
Jeff and Jason will cover the following must haves for EAs:

- Ability to translate company strategy into the necessary investments
- Efficient portfolio-driven user experience that allows you to analyze increasingly large and complex technology environments
- Ability to manage and maintain all data all in one place
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US Solar Flash

A French Twist: Will the US Pull Out?

Please Click Here for the Full Note

No More Climate Accord? Still Could Get Subsidies for Coal

President Trump will make an official announcement on the Paris Climate Accord at on Thursday at 3pm, according to the President's twitter. Media reports have suggested the President will withdraw the country from the voluntary non-binding pact, joining Syria and Nicaragua as the only three UN countries to opt out (vs 194 others signed on). While the accord is non-binding, the fulfilment of a campaign promise to pull out comes on the heels of the US international trade commission moving forward with a 201 filing to potentially raise solar panel prices domestically (which has already started to cause an uptick in panel ASPs of late) and would render solar less competitive. While the administration's recent actions suggest a continued focus on non-renewable generation, the question is whether the upcoming June 16 date could yet yield a further more explicit coal subsidy from the Department of Energy (DOE). We remain doubtful on both the scale and funding necessary to backstop coal on National security grounds. As noted in our recent visit to the AGA conference, coal plant shutdowns continue to be tied largely to high operating costs vs newer CCGTs or renewables, so we would expect the trend to continue regardless of the US status in the Paris agreement. Bottom line, we expect another wave of coal retirements to result from continued and ongoing cheap gas in Texas this Fall and follow in 2018 with announcements across PJM and the Midwest into the 2020's given low PJM capacity prints of late.

What are the Practical Effects?

There are a number of companies actively lobbying to stay in the accord. Question remains just what strategy the administration will pursue to potentially unwind the existing Obama era regulations attempting to comply with the Supreme Court's earlier endangerment finding. The question is whether a more modest program is adopted focusing on efficiency rather than largely ignoring implementation altogether, leaving this potentially to be interpreted by a future administration. We continue to see risk to some developed renewables projects without robust protections in place for the PPA, though this is more specific to the 201 filing as panel input costs increase.

What is bipartisan? Likely nuclear support

We continue to bias our viewpoints towards a constructive outcome on both new nuclear via our Buy rating on SCG and for existing plants across the Northeast. We think investors fail to appreciate the potential for a combination of legislative and PSC support. We see further success across any range of states as boding well for EXC.

NEE's Analyst Day Prospects & its Record Storage Deal— from 11 to 4.5 c/kwh

We highlight in particular the recent news from Tucson Electric Power and NEER, which recently signed a 100MW solar + storage array at ~4.5 cents/kwh (solar only portion less than 3 cents). This is consistent and even ahead of recent commentary we've heard from EPRI suggesting solar+storage on the mainland US is below half the cost of the 11 cent/kWh solar+storage array being built on Hawaii. Given that the facility in Arizona would be online by

2019, we believe NEE has assumed some price deflation on both the solar and battery front, though to what extent any eventual 201 filing is included in projections remains unclear. We believe NEE is increasingly shifting its prospects towards solar into the 2020's both given the meaningful opportunity in FL but also to capture market share without wind PTCs. The critical question at the Analyst day later this month will be focused on just where its long-term growth in '21+ is derived rather than doubts/refocusing on near-year guidance in addition to prospects for the Oncor transaction still. Net-net, we're still bullish despite the latest rally.

3GW Renewable Auction to Launch in Spain

Following a relatively unsuccessful auction recently, Spain's Ministry of Industry announced it will hold an *additional* 3GW renewable energy auction 'before the summer,' noting that a large amount of wind and solar projects didn't qualify for the 3GW auction held two weeks ago. We highlight the previous auction cleared only 1.5MW of solar with wind being granted almost all the allocated capacity. We view this as generally supportive of the renewable space in Spain – while we are still several years out the upcoming tariff reset for ABY in 2019 could yet be less of a concern going forward (though significantly low PPA prices in the auction could be read alternately by the govt as well in a more punitive outcome). With the risk of ABY's contracts being negotiated down in 2019 during its budget reconciliation process, we emphasize the continued support by the Ministry for renewables via the latest 3GW auction is a positive nonetheless. Recent commentary from the Ministry has noted that wind and solar is competitive at market prices and we see clear support for further renewable procurement on the back of the latest announcement for an *additional* auction. Further, we note the previous auction proposals were three times higher than the allocated capacity for the 2020 period which resulted in awards at €43/MWh, the lowest price ever for onshore wind in Europe.

Nevada RPS Moving to 80% by 2040

The Nevada Assembly recently passed a bill to increase Renewable Portfolio Standards across the state to 80% by 2040 vs. the current goal of 25% by 2025. AB 206 will now move to Senate Commerce Labor and Energy Committee for consideration. We see the latest move to increase RPS as a positive for utility scale PV developers. We note the bill is supported by clean energy advocates, environmental groups and businesses such as MGM Resorts, who exited NV Energy's service in favor of renewable energy.

NEE Signs Sub 3 Cent PPA in AZ

Tucson Electric Power recently signed a PPA for solar-plus-storage systems below \$0.03/KWh for 100MW solar array developed by NextEra. We note the pricing is significantly less than that of the latest combined storage facilities with recent PPA's in Hawaii being quoted at \$0.11/KWh. Further, we note a continued decline with last Fall's proposal from Clean Peak Standard pegged PPA's at ~\$0.145/kWh in 2015. We note the Tucson project is set to be online by 2019 and will be Tucson's largest dedicated renewable resource.

Solar modules in India to be taxed 5% - Not 18%

Solar modules in India are now going to be taxed at a rate of 5% vs the prior 18% that was announced under the Goods and Services Tax (GST) several weeks ago. The discrepancy essentially boiled down a typo in the document which was released. Although the increase to 5% is not an unequivocal positive vs the 18% previously, we do not see a significant impact on the longer term trend. Nonetheless, we believe ~90 cent installed utility scale solar would yet be susceptible to even minor changes in the panel pricing, so there could be some effect before the price hike resets

Engie Adds Sungevity EU business to ops

Engie is adding the European operations of Sungevity to its portfolio of distributed energy offerings. The Netherlands based arm of the Sungevity was acquired for an undisclosed amount while the new US based part of the company's name was changed to Solar Spectrum. Engie will operate the EU arm in Belgium, the Netherlands, Germany and the UK. Engie has been building its DR business with the latest acquisition the company move into the resi sector. We note this is the first deal for both companies to address the solar market in Belgium, in which Engie currently has 2.8Mn of customers.

Takeaway's from EPRI

We met recently with the longer term policy Electric Power Research Institute (EPRI) and noted both AMI and Storage are well in focus.

AMI Roll Out

As AMI rolls out across most utilities today, the larger communications network will be increasingly relevant and important. One of the key areas of focus would be standardized 'plug in' infrastructure; as technology changes, the plug in modules can be switched between distributed assets (for example, future hot water heaters could have a simple female plug interface) - this will be part of the shift towards a smarter distributed grid, yet who shares those costs isn't yet quite clear. Regardless, one of the other key areas of focus will also be the ability to communicate more effectively - ability to curtail will be key as penetration rates reach the mid single digits.

Storage

On the storage front, lithium ion is clearly the focus for the next decade but we appear to be largely beyond the 'overhype' phase and into implementation. Case in point was the Tesla Powerwall, which from announcement to implementation (one year later) reduced cost by half, doubled power, and cut the size by 60%. Yet the clearest example of large scale storage deployment of late is the Aliso Canyon situation, which was resolved much faster than expected:

1) RFP was issued in June 2016, 2) awarded in Sept 2016 and 3) final commissioning Jan/Feb 2017. While this is due in part to policy goal implementation, this still suggests batteries are being used as peaker replacements years ahead of schedule. EPRI is forecasting that storage at \$1,400/kW can be competitive with natural gas turbines by 2020.

Please Click Here for the Full Note

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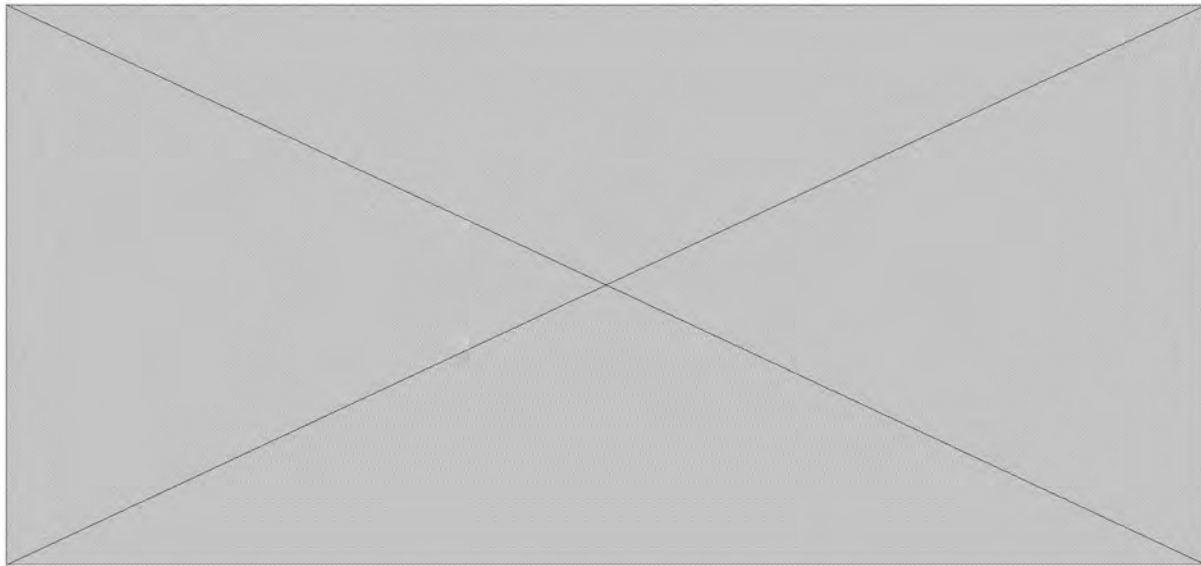
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From: Iain Kennedy
Sent: Tue 6/13/2017 5:28:01 PM
Subject: Learn Workforce Analytics From Facebook, NASA, Airbnb & more



Hi Mike,

The **HR & Workforce Analytics Summit** is almost sold out and with only a few days to go, this is your last chance to join **100+ senior people analytics** executives in attendance.

On **June 19 & 20**, you could meet and learn from leaders at **Facebook, NASA, Chevron, GAP, Dropbox, Western Michigan University, Aon, Tesoro, Aurora Health Care, Salesforce, Pfizer, Airbnb, Virgin Pulse, Wyndham, Nestlé Waters**, and many others.

Don't miss out and register now with passes starting at just \$600!

Iain Kennedy
Global Events Manager
Innovation Enterprise
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Subject: A Win-Win for DMVs

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: New Pig
Sent: Wed 6/7/2017 4:01:14 PM
Subject: [LOTO SAFETY] Is Your Lockout-Tagout Program Up to OSHA Standards?

Your special report on mess management, regs and safety.

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Is Your Lockout/Tagout Program Up to OSHA Standards?

Last year, lockout/tagout (LOTO) was OSHA's 5th most-cited regulation with 3,406 violations. That's up from 3,308 violations in 2015 and 3,117 in 2014. OSHA estimates that identifying sources of hazardous energy, establishing plans and following proper LOTO procedures can prevent about 120 deaths and 50,000 injuries each year.

LOTO programs help facilities plan for unexpected surges of hazardous energy during equipment maintenance and must include these three elements:

- Energy Control Procedures
- Employee Training
- Periodic Plan Reviews

If your LOTO program is lacking in any of these areas, check out this article for information on what your plan must have to be compliant.

[READ MORE](#)

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Austin Fageol
Sent: Tue 6/13/2017 4:59:02 PM
Subject: Briefing with your team

Mike —

Do you have time to connect this week or next to discuss where your program is in addressing the new management initiatives being pushed by OMB?

In addition to our regularly-scheduled trainings and policy forums, the Performance Institute is being brought in-house to government agencies to do customized briefings and facilitation sessions. It saves on time and is more of a working session with our team.

Sessions cover the whole range of management initiatives: updating performance measures, using data analytics, crafting restructuring plans, customer service improvement, budget justifications, risk management, and more.

Would you be interested in considering an in-house program for your team? Who should I follow-up with?

Best,

Thanks,

Austin Fageol
Director, Outreach
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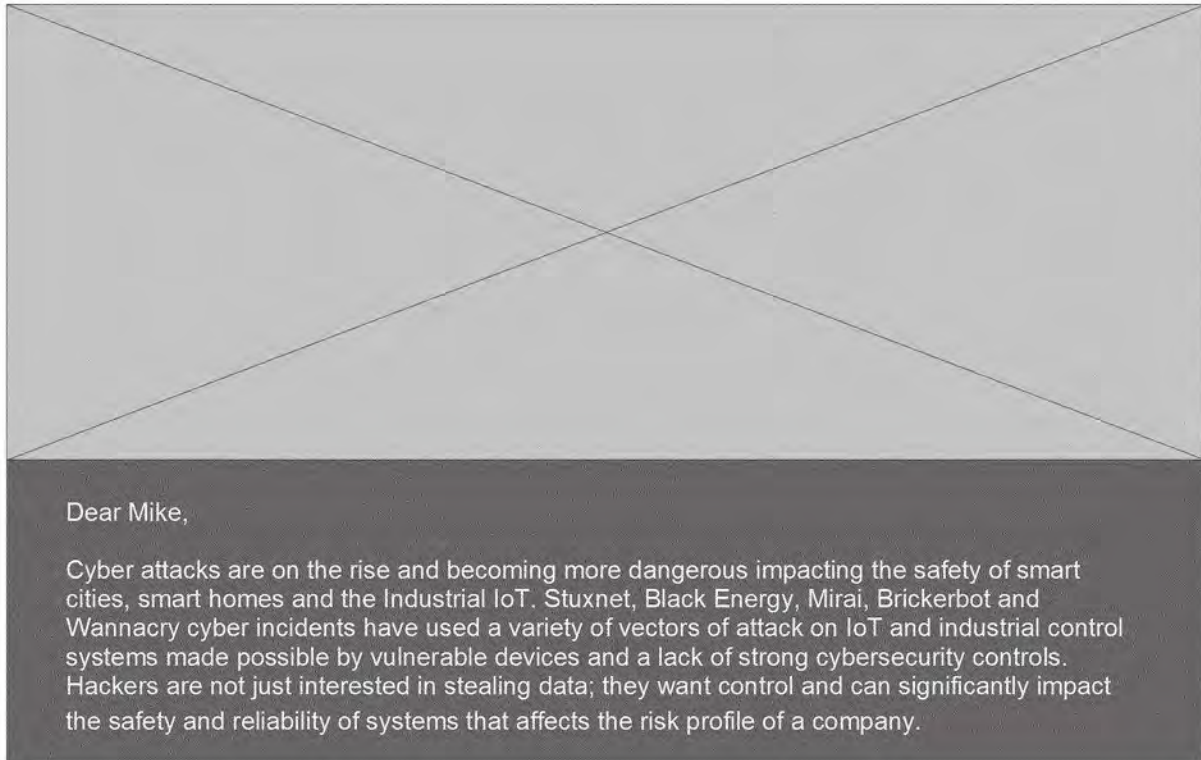
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From: Mocana
Sent: Fri 6/9/2017 7:38:38 PM
Subject: Join Mocana Webinar: Defending IoT Devices Against Ransomware, Viruses & Worms



Dear Mike,

Cyber attacks are on the rise and becoming more dangerous impacting the safety of smart cities, smart homes and the Industrial IoT. Stuxnet, Black Energy, Mirai, Brickerbot and Wannacry cyber incidents have used a variety of vectors of attack on IoT and industrial control systems made possible by vulnerable devices and a lack of strong cybersecurity controls. Hackers are not just interested in stealing data; they want control and can significantly impact the safety and reliability of systems that affects the risk profile of a company.

Join this webinar to learn about the:

- Detail of the systems and software that were compromised in recent cyber attacks
- Common vectors of cyber attack on IoT and industrial control systems
- How to defend against cyber attacks by leveraging embedded security controls in IoT and ICS devices
- How create a chain of trust workflow to harden devices and ensure secure communications.

About the presenter:

Dean Weber, CTO of Mocana, is an expert in cybersecurity for embedded systems, IoT and industrial control systems. With more than 30 years of experience in security, cybersecurity and information systems, Dean is a trusted advisor to CISOs at Fortune 1000 companies. Prior to Mocana, he was the director and CTO at CSC Global CyberSecurity. Prior he was the CTO of Applied Identity, which was acquired by Citrix. He also spent several years in the U.S. Navy working in physical and electronic security.

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Sincerely,
Mocana

If you'd like to learn more about Mocana and how our IoT security platform can protect your device network, contact us and we'll get back to you promptly.

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From: Trustwave Government Solutions
Sent: Thur 6/1/2017 7:55:45 PM
Subject: Product Engineering has released SHATTER Knowledgebase 5.15!

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ADPro 8.6.x & 8.7 customers can run ASAP to update the Knowledgebase. The components are uploaded to the Trustwave Government Support Portal at:

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Madalynn Lauria
Sent: Wed 6/7/2017 3:16:46 PM
Subject: Complimentary Lunch Seminar on Securing and Managing Privileged and Administrative Passwords



Complimentary Lunch Seminar

Securing and Managing Privileged
and Administrative Passwords



Wednesday, June 21, 2017
11:30am - 1:00pm
Mastro's Steakhouse
Washington , DC

Mike

Privileged accounts have been leveraged in every recent breach and are an area of focus of a number of Federal mandates and guidelines such as the DHS CDM Program, the 30 Day Sprint, NIST 800 53 rev 4, FISMA, and HSPD-12. CyberArk is hosting a seminar focused on mitigating risk while meeting these requirements on Wednesday, June 21, 2017 in Washington , DC. We will be discussing best practices for a successful privileged account security program, and how we have been assisting many Federal agencies over the past years.

You will learn how CyberArk can help you:

- Support DHS CDM Goals around Privileged Account Management
- Enable Multi-Factor Authentication on all account types (including shared privileged accounts, legacy systems, etc.)
- Automate recommended security controls for NIST 800 53 rec. and FISMA
- Mitigate the risk of insider threats, lateral movement, and the pass-the-hash attacks
- Protect domain controllers from Kerberos and Golden Ticket attacks

In addition, you will have the opportunity to shape the discussion by sharing ideas and posing questions. We look forward to your attendance and an interactive discussion about Privileged Account Security.

Regards,
Madalynn Lauria
617.630.6550
CyberArk
60 Wells Ave | Newton, MA 02459

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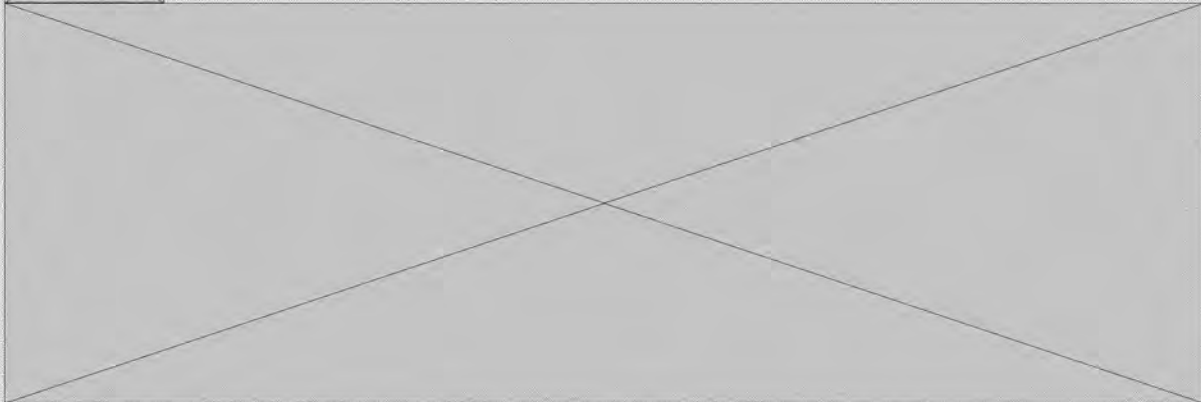
To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Venafi
Sent: Mon 6/5/2017 9:37:53 PM
Subject: Webinar: Are you protecting machine identities?

A Changing World of Machine Identity | [Join a Carahsoft webinar](#)

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Are machine identities at risk in your agency?

Join our webinar to learn how inadequate protection for machine credentials can leave your agency exposed to advanced nation state and insider threats.

[REGISTER NOW](#)

You maintain rigid control of the CAC and PIV your staff use to authenticate themselves, but what about your machines? Learn why your agency may need to tighten control for the keys and certificates that govern machine identities.

Join Venafi and Carahsoft for a live webinar on **Thursday, June 8, 2017 at 2:00pm ET, 11:00am PT.**

You'll learn how 8 best practices for better governance will help your agency:

- Improve security for your machine identities
- Reduce outages due to certificate expirations
- Respond quickly to CA or other certificate compromise

Make your keys and certificates assets instead of liabilities. [Learn more in our webinar.](#)



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Sent: Tue 6/13/2017 4:20:39 PM
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Sent: Fri 6/9/2017 5:19:25 PM
Subject: Considering a new job? Here are some options...

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Sociology and Anthropology

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BlueShore Financial - North Vancouver, Canada		
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Sent: Thur 6/1/2017 7:43:50 PM
Subject: UBS Utilities: Catching Up On Corporate Renewable PPAs [Incl. Transcript]
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US Electric Utilities

Catching Up On Corporate Renewable PPAs

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Interest Growing beyond the Tech Sector

We hosted our latest UBS Conference Call with Lily Donge and team at the Rocky Mountain Institute (RMI) to discuss the latest trends in the corporate PPA market. With a recent decline in corporate PPAs, they note sector trends shifting towards smaller projects, with new participants coming increasingly from outside the tech sector, notably in retail and healthcare to pursue additional renewable projects, with smaller projects enabling more incremental additions and less concentrated counterparty credit risk. In tandem, PPA duration is also shortening modestly towards ~10-15 years.

The End of the Large PPA era? Possibly.

RMI notes a significant drop in new PPAs between 2015 and 2016, with procurement falling from 3.25 GWs to 1.56 GWs. As some of the larger early-movers come close to their renewable targets, we see movement towards smaller capacity sizes as smaller players enter the markets, implying that the days of 100 MW+ PPAs will become rarer, with sub-100 MW more likely. Moreover, RMI notes that with increasingly smaller procurement demands as low as 5-10 MWs, focus has shifted on aggregation as a tool to join multiple smaller procurements into one benefitting from the economies of scale of larger counterparts. Broadly, we expect those with development platforms predicated on these types of transactions will encounter more challenges given the need to couple aggregate and given increasingly complex credit considerations, particularly for nascent Community Choice Aggregations (CCA) – another source of new renewable load growth aside from Corporates.

With Costs Coming Down, Solar PPAs becoming increasingly attractive

RMI notes that with solar system costs coming down over 75% in the past six years, interest in solar PPAs has been growing as of late. So far for 2017, approximately half of the procurements have been solar PPAs. Overall wind to solar ratio is likely around a 70/30 split. RMI cautions, however, that this trend is based on fuel preference, as RMI sees corporates relatively technology neutral, rather by the cost competitiveness of wind and solar; and thus, long-term dependent on the economics. In terms of location, RMI notes most of the corporate solar is in the Southwest around California; with some interest in Texas, but no fixed procurements so far.

Looking Ahead to 2020: Need to Hit Future Clean Energy Targets

While new corporates went down in 2016, we see a possible upswing closer to 2020, as many of the corporate sustainability targets are set to be achieved by 2020. We emphasize a large number of Top companies across a wide variety of sectors have already committed to specific renewable energy goals with timelines closer to the 2020 period. More to the point with PTCs slated to step-down off the full 100% rate under commence construction extensions in 2020, we perceive a further run-up to take advantage of these expiring benefits.

2015 Rewind? Probably Not.

RMI notes new corporate renewables PPAs decreased meaningfully in 2016, falling from 3.25 GWs in 2015 to only 1.56 GWs of procurement last year. Moreover, with 2017 year-to-date procurement currently around 1 GW, RMI doesn't expect any immediate reversal in the near term. In fact, RMI anticipates a slowing trend for new corporate PPAs, even with prices for new solar and wind coming down further. As some of the larger early-corporate movers reach their 100% renewable targets, we see the buyer profile diversifying away from big tech companies, as well as project sizes decreasing to smaller capacity numbers and smaller deals.

Who is participating? Not Just Big Tech.

While large tech companies still play a significant role in the corporate PPA space, we highlight an increasing trend of diversification. Since January 2016, 14 corporations have signed deals with many of them being first time transactors. We note growing interest by industries such as healthcare, pharmaceuticals, manufacturing, and large retailers. Moreover a large portion of Fortune 500, and the majority of Fortune 250 companies have renewable targets in place, likely pushing them into the corporate PPA space to achieve their goals. How these new companies will participate in the space will depend on the load size of the operation, but expect them to likely come in below the procurement sizes originally experienced with the tech firms.

Aggregation: Splitting the Pie

With greater amount of smaller players entering the corporate PPA market and average procurement demand decreasing, RMI notes increased interest in aggregation. Aggregation would combine corporate buyers who want to procure utility scale renewables due to their economies of scale, but do not have the ability to participate at that volume. Thereby, allowing these companies to participate without taking on the entirety of the contract. RMI notes this remains a rather new tool in the space, but as market players become more diversified, we expect increased potential for more aggregated deals.

Sustainability, not just Economics Driving PPA Interest

RMI notes that sustainability represents the main driver behind the interest in corporate PPAs; with companies not just aiming to maximize the economics of one of these transactions, but instead primarily focusing more on achieving their sustainability targets at a reasonable price. In fact, according RMI, companies mainly aim to just more or less break even over the lifetime of the PPA; with even a slight loss being viewed as an acceptable--a sort of implied REC purchase price. However, RMI snote this still leaves sensitivity to the power wholesale market price, as corporates might not intend to make a return out of a project still remain cautious to not losing too much money. Overall, we understand this focus on sustainability as a general positive indicator for the corporate PPA sector, as the number of sustainability targets in the corporate space has been growing meaningfully as of late.

Where are the Hot Markets?

While Texas has been the single biggest market historically, we see increasing interest in other US regions. We note Texas still contributes the plurality of procurement, followed, however, by growing demand in SPP and PJM, as well as a fair amount of interest in CAISO. We highlight that while the majority of interest has been in wind, there exists growing demand for solar. In fact, approximately half of 2017 procurement to date has been in solar.

What are other trends?

We note meaningful shifts as of late not only in terms of location and fuel source, but also in regards to duration, price and buyer profile.

Solar Getting in the Game

While most of corporate PPA deals have been on wind, RMI sees increasing interest in solar, with about half of the 1 GW of procurement to date being in the solar space. RMI notes this is mostly a result of solar's declining installation cost, which has made it more economically competitive, not, however, as a significant shift in buyer preference.

Location, Location, Location...

RMI sees significant locational variability in how firms procure their renewables. Options vary between near-by generation, synthetic delivery, green tariffs, and behind the meter. We note preference depend on the sector, with tech companies preferring projects located closer to their data centers than their headquarters, while retailers are showing interest in synthetic delivery. RMI notes there are no concrete figures on behind-the-meter procurement, but we expect on-sight generation to be between 5-15% for participating corporates; thus, implying behind-the-meter is not enough to meet the 100% renewable targets announced by some corporates as of late. We also highlight growing interest in green tariffs, until now mainly seen in Nevada through NV Energy.

Tax credits

RMI highlights that most corporates are not interested in the equity ownership, i.e. not taking the tax benefits. RMI believes the organizational separation of roles between energy procurement and treasury, responsible for taxes has much to do with the decision not to elect to take the tax equity attributes directly in these projects.

Please Click Here for the Full Note

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EBOOK CHAPTER 4

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Subject: This Thursday: Network and Learn

Hi Mike,

Sometimes multitasking can get a bad rap. But we believe that often multitasking can be really awesome, especially when you're networking, learning, and enjoying complimentary drinks and apps at the same time.

This Thursday, June 15, starting at 6pm:
How to Unlock the Full Potential of Your Data with Integrated Intelligence

Join us and your gov peers at 1776 in Washington, D.C. after work on Thursday for presentations on how GIS is helping integrate and unlock insights in gov data.

In addition to networking or enjoying a drink and lights apps, from 6:30-7:30pm, you'll hear from:

- Tracy Toutant, Deputy Chief of Customer Success, GEOINT Services Office, National Geospatial-Intelligence Agency
- Brooks "Jon" Breece, Geospatial Capabilities Advancement Branch (ATSGA), National Geospatial-Intelligence Agency
- John Brandt, Diplomatic Courier and Chief of Classified Pouch, U.S. Department of State
- Ben Conklin, Industry Manager Defense, Intel and National Security, Esri

Register for free now: <http://direct.govloop.com/smart-maps>

See you there,
Doug Mashkuri
GovLoop Community Manager

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GovLoop, 1152 15th St., NW, Suite 800 Washington, D.C. 20005 | p: 202 407 7500

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Sustainable City Network
Sent: Mon 6/5/2017 7:11:37 PM
Subject: [SPAM] Learn how to create sustainability plans - online course July 11-13

Sustainable City Network will present an online training course for any personnel who are responsible for developing sustainability plans, greenhouse gas emission inventories, climate action plans or any sustainability strategy for a community, business or institution.

This course will be presented in three 2-hour sessions held on consecutive days, July 11, 12 and 13, 2017. Class sessions will begin promptly at 10 a.m. Pacific, 11 a.m. Mountain, noon Central and 1 p.m. Eastern. The sessions will be recorded so registrants may attend live or via on-demand streaming video.

This course will focus on the implementation and strategic thinking that is required to implement a Sustainability Plan. Too often, we write a plan and have the greatest intentions of implementing all of the metrics only to have these ideas fall flat because of politics, organizational culture, or lack of support from the top. This course will teach you how to incorporate storytelling and systems thinking into a strategic plan that gets your plan implemented and enables you to move the needle further and faster to create a more sustainable community.

WHO SHOULD ATTEND

This course is appropriate for municipal, state and federal government employees, educational and healthcare institution personnel and private-sector consultants or sustainability managers responsible for developing sustainability plans, greenhouse gas emission inventories, climate action plans and/or sustainability initiatives of any kind.

Class Format

This course consists of three 2-hour online sessions that take place on Tuesday, Wednesday and Thursday, July 11, 12 & 13, 2017. Each registrant will be provided with electronic copies of course materials prior to the online course.

Classes will include lecture and Q & A utilizing the GoToWebinar.com platform. A quiet room and a reliable Internet connection are required to take this course. See GoToWebinar.com for technical requirements.

Certificates of completion will be provided to all attendees after the final session.

Dates and Tuition

Each session will begin promptly at 10 a.m. Pacific Time, which is 11 a.m. Mountain Time, noon Central Time and 1 p.m. Eastern Time.

Registration is free for all participants. A \$25 fee for materials and a \$25 fee for a certificate of completion will be charged to all participants.

Classes are held on the following dates:

Tuesday, July 11, 2017, 10 a.m. - 12 p.m. **GroupRate3-5**

Wednesday, July 12, 2017, 10 a.m. - 12 p.m. **GroupRate6-9**

Thursday, July 13, 2017, 10 a.m. - 12 p.m. **GroupRate10-Plus**



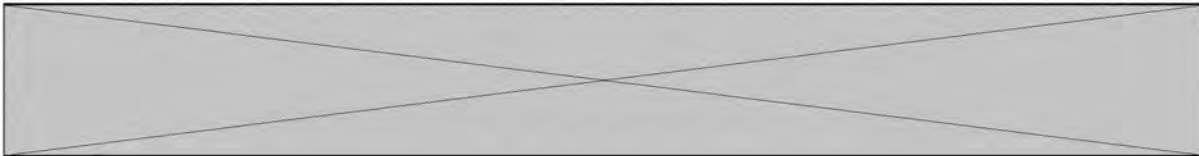
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Sent: Tue 6/13/2017 2:50:35 PM
Subject: GovernmentCIO Journal Weekly Newsletter

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Inside the FDA's IT Strategic Plan

When the U.S. Food and Drug Administration released its IT Strategic Plan in September 2015, Chief Information Officer Todd Simpson incorporated a review process in order to revisit the plan annually and ensure it keeps up with mandates, new technologies and priorities.



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FORWARD

Congressman Jim Langevin's Three Cybersecurity Priorities

**ities in a world of machine
ected devices**

Congressman Jim Langevin (D-RI), ranking member of the Subcommittee on Emerging Threats and Capabilities, identified a leading problem facing national cybersecurity today: as technology continues to improve, the networks that need to be protected are only becoming more complicated.

Speaking at the Institute for Critical Infrastructure Technology (ICIT) Forum on June 7 in Washington, D.C., Langevin explained that traditionally, patching vulnerabilities typically involves modifying software with some code changes. Yet when the vulnerability is a trained, machine-learning behavior, how does it get patched? [\(More...\)](#)

Patching National Cybersecurity Threats Starts with Supply Chain

The national cybersecurity threat level is evolving, and government officials are calling on industry to better secure the Internet of Things and connected devices as they continue to enter government networks.

Tech Corner Automate Table Auditing

The National Institute of Standards and Technology (NIST) establish the security

Deloitte's Seven Emerging Tech Trends

**The company
found the next
phase of IT
innovation facing
CIOs in and out of**

government

In Deloitte Consulting LLP's recently released tech trends report, "The Kinetic Enterprise," it identified the forces that remain constant in driving IT transformation; digital, analytics, cloud, the reimagining of core systems... [\(More...\)](#)

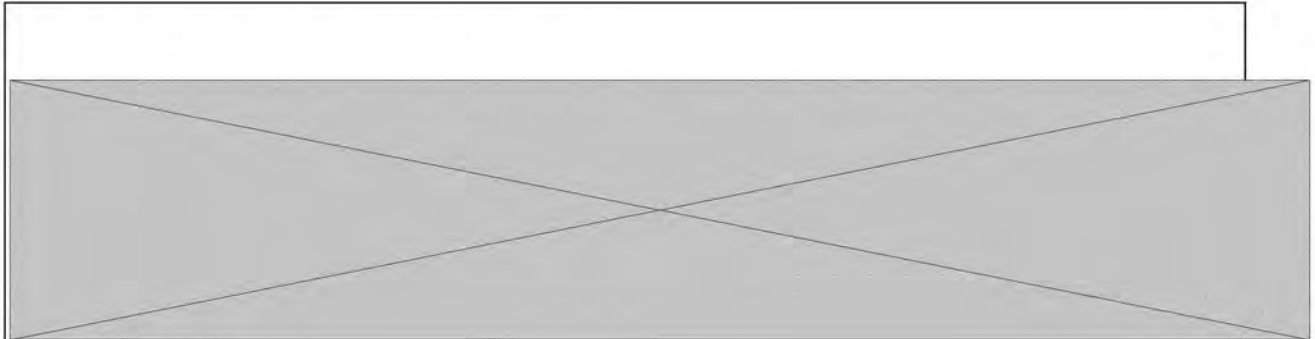
audit policies, content and availability of audit results in the event of software changes. Specifically, AU-2 (Audit Events), AU-3 (Content of Audit Records) and AU-12 (Audit Generation) address when an audit is required, what is included in the audit and the ability to generate audit records. The remaining controls in this family provide the guidance for ensuring that the system is capable of storing and protecting the audit records, that they are accessible and that they are able to be analyzed by the appropriate personnel.

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From: MCPmag.com Newsletter
Sent: Thur 6/1/2017 7:32:10 PM
Subject: [SPAM] Working with Object Types in PowerShell, Strategies To Protect Against Security Attacks, Office 365 Add-In Deployment, More



June 1, 2017

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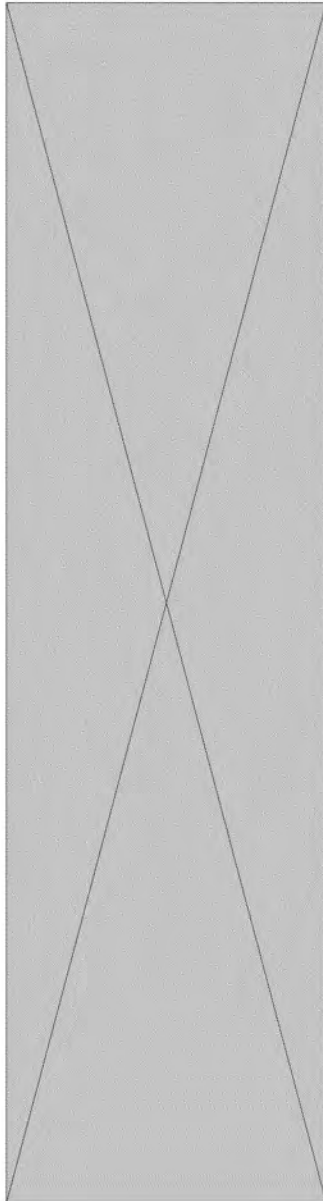
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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Micro Focus
Sent: Tue 6/13/2017 2:03:26 PM
Subject: Attend the Live Webcast: The Alternate Truths of Identity Management

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WEBINAR:

The Alternate Truths of Identity Management

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What are the real truths?

It is an exciting—and challenging—time in the identity management space. Digital disruptors like IoT, the Cloud, Hybrid, Blockchain, Shadow IT, DevOps, and more suggest a big change in identity management. What does that change look like?

Join our webinar as we explore alternate truths including:

- Received wisdom: applying what we know to future technologies
- To start over, or evolve?
- New drivers: identity management game changers
- Are current identity management practices fit for purpose?
- Identity Powered-Security: the enemy of alternate truths

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Zmanda
Sent: Fri 6/9/2017 12:08:57 PM
Subject: Reduce the Cost and Complexity of Data Protection

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Tripwire, Inc.
Sent: Thur 6/1/2017 7:18:49 PM
Subject: [Ebook] Protecting Critical Sectors from Cyber Threats

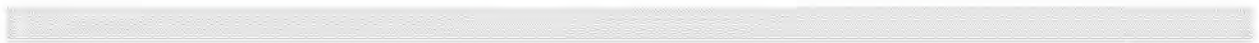
Securing assets and infrastructure in a constantly connected, digital world. [Read Online](#)



Securing Critical Infrastructure Against Cyber Threats

U.S. government facilities are one of the designated critical infrastructure sectors whose systems and networks are vital to maintaining national security and public health. With the rise of Internet - connected systems, critical infrastructure attacks no longer require physical access. Protecting critical sectors today means accounting for cyber security.

Industrial Cyber Security For Dummies (PDF) discusses the concepts of cyber security in ICS environments and will help both IT and OT professionals determine the foundational security controls appropriate to each unique industrial environment. Whether your role is within OT or IT, there's something for everyone's interest and benefit.



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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Records Management Workshop with NARA Keynote
Sent: Mon 6/5/2017 4:07:43 PM
Subject: [SPAM] June 20th - Gov Records & eMail Management - Going Forward to Meet Requirements

Records Management in Government Training Workshop XIV

*Agency Self Assessments are in to NARA
- How Can You Improve Your Scores?*

Managing Government Records Directive Updates:

**What Agencies Need to Do for 2017 and Beyond
Lessons Learned and Best Practices**

**June 20, 2017
Willard InterContinental Hotel
Washington, D.C.**

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Keynote Speakers:

**Don Rosen
Director of Records Management Oversight and Reporting
National Archives and Records Administration (NARA)
and**

Arian Ravanbakhsh
Manager, Policy and Program Support Team
National Archives and Records Administration (NARA)

Additional Government Speakers
Matthew Olsen
Acting Chief Privacy and Data Sharing Officer
Acting Executive Director
Office of Privacy & Information Management (PIM)
U.S. Department of Health and Human Services

Mark Patrick
Chief, Information Management Division
The Joint Staff Secretariat
Department of Defense

Additional Government Speakers to be Announced Soon

David Ferriero, the Archivist of the United States, said:

Working together, NARA and all agencies continue to make progress on the key goals and requirements in the Directive. For us to succeed as a records management community, the SAORMs in each agency must drive the change that needs to happen if we are to realize the vision of a digital Government. Based on the data summarized in this report, we are making progress, but there is still much work to do .

The analysis shows that SAORMs (Senior Agency Officials for Records Management) reported they:

- *Will meet the email target by the end of this year (92%).*
- *Will meet the target to manage permanent electronic records in an electronic format by the end of 2019 (92%).*
- *Are taking actions to ensure records in non-official messaging accounts are captured in an official account within 20 days (83%).*
- *Will submit schedules for all existing paper and other non-electronic records by the end of 2016 (91%).*
- *Are preparing for the upcoming change in Presidential administration (79%).*

This workshop will examine the SAORM's report to determine what steps are required to fill the gaps

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Government and Industry Partners are Invited to Register

Goals of this workshop are:

- **Focus on email retention regulation and policy and email best practices**
- **Provide attendees with a clear idea of the changes envisioned in the Directive,**
- **Strategies to obtain funding for solutions**
- **Help understand the role of the Senior Agency Official (SAO) in setting agency priorities and achieving program success**
- **Describe the developing roadmap that will lead to realizing these changes, and**
- **Describe the steps individual records managers can do now to align their work with the records management future the Directive envisions.**

- **Specific Agency Actions to be Completed by December 2015 and the out years**
- **Establishing a community of interest for Records Management**
- **Current email policy and regulations**
- **Tips for planning for the Directive's 2019 Deadline**

Overview:

With the recent headlines regarding government email retention and e-discovery, it is important to understand how the NARA/OMB regulations and deadlines will impact your agency. This one-day Potomac Forum Workshop will focus on the activities mandated by the NARA/OMB Records Management Directive. Key executives from NARA and government agencies will discuss the directive and its implementation. Detailed review and analysis of the directive will be presented to help agencies better understand what they need to do, how to do it, and how to get the funding necessary to be successful. The recent Agency Submissions to NARA are discussed along with scores and suggestions for improving Agency Scores.

What You Will Learn:

- What happens now that the 2016 deadline has passed
- What needs to be done to comply with the provisions of OMB M-12-18
- How the relationship between NARA and Federal agencies have and will change
- How the role of technology will evolve in the achievement of OMB M-12-18's goals
- What this initiative will mean for Federal records management in the short and long term
- What the components of a sustainable Records Management program will be in this new environment
- A better idea of the commitment of time and resources needed to comply with the Directive
- How the Senior Agency Officials can and are making a difference in improving the management of government records
- NARA Requirements for managing email - lessons learned from recent IRS news event - Complying with the Law - the Federal Records Act and what it means for email and other records losses
- The November 2014 Records Management Legislation and what it means to Agencies and Records Managers
- and more...

Why You Should Attend:

- To gain a clear understanding of OMB M-12-18
- To assist you in getting the best start on the many changes OMB M-12-18 will bring to your agency
- To learn key funding strategies to help your agency implement solutions to meet its objectives
- Hear from other government officials about the practical aspects of complying with the Directive
- Ensure success of your Records Management Program as you implement the Directive
- Lessons Learned since the publication of the Directive
- Understand the NARA requirements for email management - avoiding embarrassing non-conformance
- Understand email retention regulation, policy, and legislation.

Who Should Attend:

- CIO's and the Staff including technical staff involved with Records Management
- Senior Agency Officials (SAO's) charged with responsibility for the implementation of solutions for their agency
- IGs and Staff
- Government Records Managers
- All those with responsibility for initiating and carrying out the reforms mentioned in the President's Records Management Directive
- Professionals responsible for managing information resources on an enterprise-wide basis
- Those needing to understand latest NARA policy and guidance
- Contracting, Procurement and Acquisition Management Professionals
- Program Managers Who Must Understand Records Management in Government
- Government executives who want to understand email retention and records management regulation, policy, and legislation.
- Industry Partners

Format:

This workshop will combine keynote presentations by NARA, lectures on implementing the Directive, real world examples and discussions to provide a thorough, enjoyable day of learning.

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The Previous Thirteen Potomac Forum Records Management Workshops
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Rated as "Excellent" by Workshop Attendees
CEU Credits Awarded

Representative Student Testimonials from Previous Potomac
Forum *Managing Government Records Directive from OMB and NARA*
Workshops

*It was informative and what I have learned can be
taken back and applied to my office.
Records Management Specialist
Civilian Department*

*Excellent - I got a number of good ideas and suggestions.
Well worth the investment.
Regulation Council
Civilian Administration*

*One of the best trainings I have been to.
Records Manager
Navy Center*

*Very well done
Deputy Commissioner for Legislative and Congressional Affairs
Civilian Agency*

*The overall workshop was great. I learned a lot of valuable information on to help me
in my current position and provide additional guidance for my organization
Records Management Officer and Team Lead
DOT Agency*

*... for anyone who needs to follow the directive for records management
Admin Specialist
Civilian Commission*

Outstanding!

Management and Program Analyst
DOT Agency

Very Well organized. Job well done!
DoD IG Specialist

Great!
Assistant Records Manager
Small Agency Commission

Workshop for Government and Industry Partners

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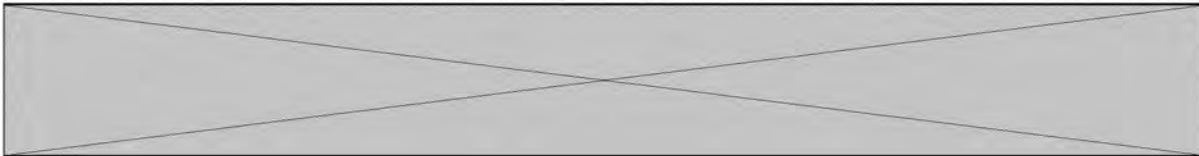
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AFCEA Bethesda Honors IT Innovators

Ten government and industry leaders recognized at InnovateIT Award Luncheon

The AFCEA Bethesda chapter awarded both government and industry change agents for their part in advancing information technology within their organization and government-wide, at its 10th Annual InnovateIT Awards Luncheon on June 1. The awards were presented in Washington, D.C., and included innovation in business and citizen interaction resulting in improved efficiencies and cost-savings.

Navigating Between Regulator and Coordinator

As federal health agencies strive to keep up with the evolving pace of health technology, interoperability and information sharing remain among top priorities, but pose continued challenges.

Tech Corner **A Better Way to Document Project- Related Information**

Most Federal agencies have formal Software Development Life Cycle (SDLC) Management frameworks for managing their IT projects. The names of the SDLC phases may vary, but most have one thing in common: the need to create and maintain documentation. Agencies often provide templates in Word, Excel or PowerPoint format to ease the process and encourage consistency across projects. Nevertheless, creating and updating these documents consumes much time and effort

IHS Addresses EHR Deficiencies with \$94 million Contract

**CIO Rives also lays
out healthcare**

technology vision

Service contract award to General Dynamics Information Technology in April is intended to enhance the Resource and Patient Management System, the agency's electronic health record... [\(More...\)](#)

and yet often results in out of date information.

It's Not Enough to be Agile, You Need to Measure It

Whether your organization recently underwent an Agile transformation or has practiced Agile for years, assessing the level of agility at regular intervals is important. Agile is practiced differently at all levels of the organization, and how it is implemented at the enterprise level effects how it is implemented at the team level.

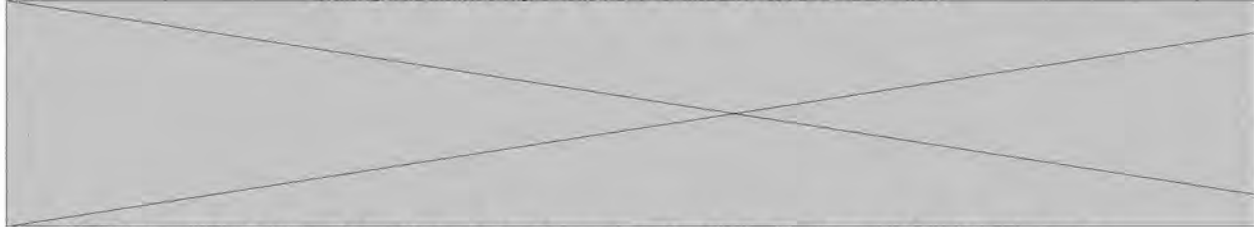
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The **2017 Internet of Things Developers Conference** co-located with the new **Machine Learning Developers Conference** was a big success! More than 1,700 registered attendees were welcomed to attend over 65 valuable conference sessions, and connect face to face with exhibitors showcasing the latest products and cutting edge techniques.

Don't miss out! **Download** the full conference proceedings for only \$295 through June 30th!

Gain access now to leading industry keynotes, valuable strategy sessions and technical presentations to give you an edge.

Tracks included:

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- ☐ Deus ex Machina
- ☐ IoT Connectivity
- ☐ Securing IoT Devices and Applications
- ☐ Living on the Edge
- ☐ Application Development
- ☐ Machine Learning Adventures

Visionary Keynotes and Strategic Talks

Shifting the IoT Mindset from Security to Trust
Bill Diotte, *CEO, Mocana*

NEW ~ AI and Deep Learning in the Enterprise
Sumit Gupta, *VP, HPC, AI, and Machine Learning, IBM*

Zero Touch Device Onboarding for IoT
Jennifer Gilburg, *Director of Strategy, Internet of Things Identity ~ Intel*

Perception, Deep Learning and Autonomous Driving
Don MacMillen, *VP Engineering, DeepScale*

Build Moving Experiences
Alexander Graebe, *Developer Relations Lead, Uber*

Secure Gateway and IoT Sensor Hub running OpenWRT
Patrick Heath, *Senior Marketing Manager, Microchip Technology*

When the Hardware Doesn't Do What Your Software Told It To
Roy Chestnut, *Director, Teledyne LeCroy*

COTS vs Custom - Optimizing IIoT Solutions for Longevity and Reliability
Jack Smith *Director of Technology and Engineering, WinSystems*

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Keynotes

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Zero Touch Device Onboarding for IoT - Intel
Perception, Deep Learning and Autonomous Driving - DeepScale
AI and Deep Learning in the Enterprise - IBM

IoT Development Strategies

How to Save the Smart Home from Cyber Invasion - prpl Foundation
Why are 70% of IoT Projects Stuck in PoC Purgatory - Electric Imp
Bluetooth and Beyond - Plantronics
Build Moving Experiences - Uber

Deus ex Machina

Extracting Intelligence from IoT Data using Deep Neural Networks - Pluto AI
You Say You Want AI Revolution? - TIRIAS Research

IoT Connectivity

A Standards-Based Approach to Long-Range Wireless Connectivity for Sensor Nodes - Texas Instruments
MacBee - IP-based IoT Solution - GALAXYWIND
All Bluetooth-Enabled Devices are not Created Equal - EEMBC
Navigating the Non-Cellular Sea: Transitioning to LPWAN - Podsystem
Developing Beacons with Bluetooth Low Energy Technology - Silicon Labs
Fearless Monolithic Integration of Bluetooth IP - Synopsys
Multiprotocol Connectivity from Bluetooth Commissioning to Mesh Networking - Silicon Labs
LoRa Technology and Real World Applications - Microchip

Securing IoT Devices and Applications

IoT Security Means Protecting Code and Securing Communications - Rowebots
How to Secure your IoT Product - INSIDE Secure
How to Securely Connect to the Cloud - STMicroelectronics
A Hands-on Intro to Industrial IoT Security - Infineon
The Internet of Industrial Devices, are we there yet? - Mentor Graphics
Secure Gateway and IoT Sensor Hub running OpenWRT - Microchip
Performance and Energy Benchmark for IoT Security Implementations - Synopsys

Living on the Edge

Verifying and Optimizing Software for Power on IoT SoCs - Mentor Graphics
Designing for Ultra Low Power: Mechanisms for Reducing Energy Consumption - Altran
Custom SoC Design for IoT - asicNorth
Advantages of MIPI Interfaces in IoT Applications - Synopsys
Why Existing Memory Device Architectures Aren't Good Enough for IoT Designs - Adesto Technologies

Application Development

IoT's Affect on Current Product Life-Cycle Development - Are We Ready? - JB Systems
Boosting Your IoT Application in All Dimensions - IAR Systems
COTS vs Custom - Optimizing IIoT Solutions for Longevity and Reliability - Win Systems
When the Hardware Doesn't Do What Your Software Told It To - Teledyne-LeCroy
Exploring IoT Connectivity - Conquering the Beast - PolyCore Software
Data Modeling for the Industrial Internet of Things - ThingWorx
Sensor-2-Server: Execute Locally, Communicate Globally - FreeWave Technologies
Voice UX: Designing IoT products for Zero UI - Flex
Insider Stories of Successful IoT Projects - The Qt Company

Machine Learning Adventures

How to Identify the Value in the Data and why Right Quality is Crucial - sepp.med
Creating Smart Cars with Machine Learning - ThingWorx

Image Front End Real-Time Data Analytics - TOPS Systems
Solving the Challenges of Implementing Deep Learning Efficiently - Xilinx
Overcoming the Memory System Challenge in Dataflow Processing - Sonics
How GPU Server Architectures Deliver Best Performance for Deep Learning Training Workloads -
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Subject: 5 Mistakes to Avoid When Migrating to Windows 10

5 Mistakes to Avoid When Migrating to Windows 10*

Are you involved in a Windows upgrade project?

Learn the do's and don'ts of how to cost-effectively upgrade and deploy new PCs!

Windows® 10 was designed specifically to accommodate business users who were unwilling to move to Windows 8.

But while consumers can easily upgrade to Windows 10 at an affordable cost, businesses face a more difficult process. And unless the deployment process is well-defined and tools properly tested, resources and budgets will be stretched beyond their limits.

This webinar is for anyone involved in PC upgrade / refresh projects and will focus on eliminating hidden costs, downtime and post-upgrade support.

* or Windows 7

To register for the webinar:

1. [Click here to sign-up](#)
2. Click "Register".
3. On the registration form, enter your information and then click "Submit".

We will send you a confirmation email with instructions on how to join the event.



Host: Thomas Koll (CEO)

Length: 30 minutes

Date/Time:

Wednesday, June 7, 2017
@ 10:00 AM PST

This email was sent to flynn.mike@epa.gov. If you no longer wish to receive these emails you may [unsubscribe](#) at any time.

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Gina Kim
Sent: Tue 6/13/2017 11:22:51 AM
Subject: Do You Trust Mainstream Media? Share Your Views

Colleagues,

In 2016, nearly **80% of Washington Insiders cited traditional media as their most trusted source of information**. Has the volatility in the media environment shaken that trust? Or fortified it?

I'd like to personally invite you to join the group of trusted DC insiders helping us answer these questions through National Journal's 2017 **Washington in the Information Age** survey. [Participate Here](#).

As we discover what's changing inside the Beltway this year, we hope you'll take **15 minutes** to add your voice to our growing number of participants. Responses are kept **strictly confidential** and only presented in the aggregate.

Your insights will contribute to a better understanding of how news and information influences policymaking, and how we can improve communications in the future.

We are grateful for your time, and in exchange for your participation in this research, we will provide you with priority access to the executive summary stemming from this work.

Thank you for your support,
Gina Kim
Chief Analytics Officer
National Journal
[Connect with me on LinkedIn](#)

If you have trouble accessing the survey above, please use the link below.
https://njresearch.co1.qualtrics.com/jfe/form/SV_7VRHmJBmfWYtV0p?Q_DL=8d11OBsYHOpst81_7VRHmJBmfWYtV0p_MLRP_bjXHNO

PRIVACY AND CONFIDENTIALITY: This study is conducted by National Journal Research. National Journal maintains a strict firewall between its research and newsroom; journalists do not have access to these data. If you participate, your identity and responses will remain confidential.

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Splunk Inc.
Sent: Thur 6/1/2017 6:01:23 PM
Subject: Hear how UofMD, World Bank, and State have transformed IT with Splunk

If you have trouble viewing this email, [read the online version](#).



Good to Great: Ensuring Mission Success with Real-time Operational Intelligence

Join Splunk on Wednesday, June 7th to hear how organizations can gain the visibility needed for real-time situational awareness across the entire IT stack.

Hear from Splunk customers University of Maryland, World Bank, and State Department on how they are leveraging Splunk to gain the operational intelligence needed to monitor, troubleshoot and manage effortlessly.

- **7:30am** - Registration & Breakfast
- **8:30am** - Welcome & Introductions
- **8:45am** - Customer Panel: Meeting IT Challenges - Success Stories from the Field
 - **9:45am** - Break
- **10:00am** - Monitor, Troubleshoot & Manage Across the Stack with Splunk
 - **10:35am** - Taking Action in Your Organization
 - **11:15am** - Closing Remarks

REGISTER NOW to join us - we look forward to seeing you!

The Splunk Team



Event Details

June 7, 2017
7:30am-11:15am
Grand Hyatt Washington DC
1000 H Street NW
Washington, DC 20001

Featured Speakers

- **Tunny Basar**, Vice President and Co-Founder, Pernix Consulting
- **Steven Bochniewicz**, Senior IT Security Analyst, University of Maryland
- **Mike Makar**, Senior IT Manager, World Bank Group

More Resources

- For more insight, download this whitepaper - [How Gov IT Can Gain More Insight into Operations Data](#)

[Register](#)

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Splunk Inc. | 270 Brannan St. | San Francisco, CA 94107

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: K2 Communications
Sent: Mon 6/5/2017 1:09:05 PM
Subject: Ready to get a closer look at how K2 actually works?

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ELIMINATE TEDIOUS, REPETITIVE CODING SO YOU CAN DO WHAT YOU REALLY LOVE – SOLVING PROBLEMS

Take a closer look at how it really works

Although there is no exact formula to creating a perfect business process application, K2's approach to automation can increase your chances of deploying a successful solution that will stay relevant as technology changes and your company grows.

K2 doesn't view coding the way other vendors do and it makes a huge difference in your application's cycle time, scope and ability to address resource and skill shortages head-on. K2's platform is so flexible and powerful that Scott Babcock, Workflow Center of Excellence Operations Manager for Shell Oil Company says:

"We have yet to run into a process which we haven't been able to automate using K2."

We're confident that K2 can help you address some of your biggest concerns and we invite you to peek under the hood of our platform. Get a sense of what K2 can do for your enterprise by exploring our interactive guide, Anatomy of a K2 End-to-End Solution.

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: SBE Inc.
Sent: Tue 6/13/2017 9:33:43 AM
Subject: June is National Healthy Homes Month.

Greetings!



June is "National Healthy Homes" Month.

**New Haven Health Department knows how to do
it right and do it big!**

www.storyboardinc.com

www.storyboardinc.com

Story Board Enterprises, Inc., 806 Kingswood Dr, Cary, NC 27513

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Redmond magazine
Sent: Thur 6/1/2017 5:32:16 PM
Subject: [SPAM] Michael – Your June 2017 Digital Edition Is Now Available

DOWNLOAD THE CURRENT ISSUE OF REDMOND MAGAZINE TODAY!

Dear Michael,

Your digital edition of the current REDMOND magazine is now available online.

To download, just click the link below:

[REDMOND Magazine - June 2017 Digital Edition](#)

Thank You.

Digital Services Department
REDMOND Magazine

P.S. - Please take a moment to [confirm your free digital subscription now](#)

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: pinkelephant=pinkelephant.com@sa2.scsend.com
Sent: Thur 6/8/2017 8:10:00 PM
Subject: [SPAM] Huge Savings On Training & Education – Take A Look

DevOps Foundation

Organizational Change Management
Foundation

ITIL® Foundation

Business Relationship Management
Professional

here

ITIL Expert Virtual Freedom Pass

ITIL Expert Self-Paced Freedom Pass

Save over 30%!

Take up to 2 years to participate in 7 self-paced online courses toward your "ITIL Expert" qualification.

Team Passes

Save over 30%!

If you can't bring us to your location for onsite training, you can still save on our Public Education classes by purchasing your seats in bulk. Discounts vary depending on how many seats you purchase at once.

DevOps In Action: The Phoenix Project Simulation

This is not a course; rather it is a business simulation presented onsite only. Give us one day and you will learn what DevOps is really all about because you will live it through this excellent experiential learning exercise! Purchase it with DevOps Foundation and get 10% off.

Summer Sale

Save up to 35% on June, July and August onsite and public courses!

2. Pink18 – The Industry's #1 Conference! Only 3 Weeks Left For Summer Early Bird

The Pink18 Summer Early Bird ends June 30th – save \$1000!

Our 22nd Annual International IT Service Management Conference & Exhibition (Pink18) will be hosted in Orlando, February 18-21, 2018.

Click on the link below to look at the amazing program – numerous speakers already confirmed.

Topics include DevOps, Agile, Lean IT, ITIL and more! Others try, but no one can surpass our content rich and comprehensive program.

There's only 3 weeks left for the Summer Early Bird!

[Click here](#)

If you have any questions, don't hesitate to give me a call at the number below.

Sincerely,
Jenifer Boyce
Account Manager
Pink Elephant
1-888-273-PINK, ext. 288
www.pinkelephant.com

<http://www1.pinkelephant.com/newsblast/Jenifer/06-08-17/default.html>

[click here](#)

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Granicus Webinars
Sent: Thur 6/1/2017 5:10:12 PM
Subject: [Webinar] Drive revenue for your agency

FREE WEBINAR

DMV Spotlight: Secrets to Saving Millions and Driving Revenue

JUNE 21 | 2PM ET

REGISTER
NOW

DMVs are Transforming with Digital Communications

But they aren't the only agencies that spend millions of dollars every year sending snail mail notices of license registrations and renewals. There is a better way to notify citizens and drive them to action — digital communication.

Register for this free webinar on June 21 at 2PM ET / 11AM PT to learn how DMVs are saving money, improving the citizen experience and generating income with email and text message notifications — and how you can replicate their success.

REGISTER NOW

IN THIS WEBINAR, YOU'LL LEARN:

How digital
communications are
transforming DMVs

Best practices for
connecting with hard-to-
reach audiences

Ways to leverage text
messaging/SMS
technology

Granicus

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Micro Focus
Sent: Wed 6/7/2017 2:01:23 PM
Subject: Engage with NetIQ customers

[View Online](#)



Just jump on in!

[Visit NetIQ Communities](#)

Start engaging with NetIQ customers on the Communities page.

You can read commentary on the latest industry news in NetIQ Views, learn technical tips and tricks in Cool Solutions, and connect with NetIQ experts in our Support Forums.

Join the conversation today.

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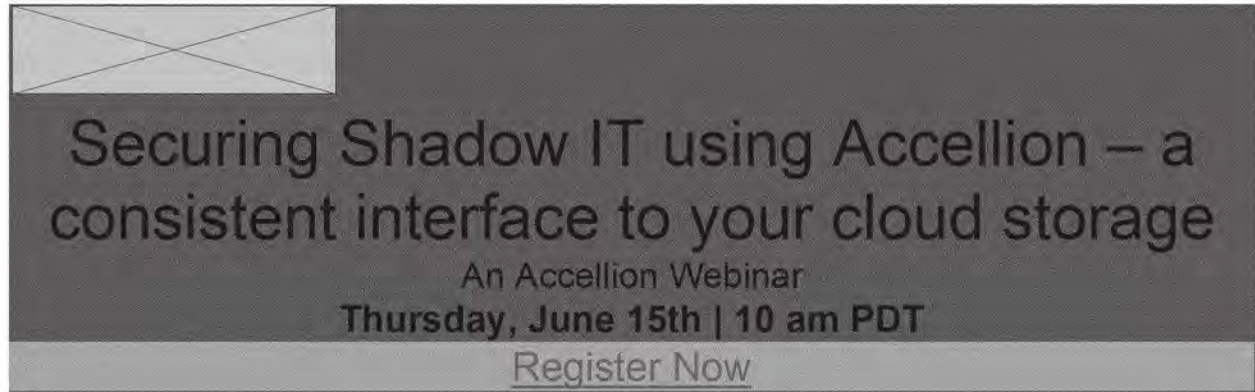


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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: The Accellion Team
Sent: Wed 6/7/2017 1:35:23 PM
Subject: [SPAM] Webinar: Securing Shadow IT using Accellion



Hello Mike,

Many organizations struggle to control business content their employees share through public cloud services such as Dropbox, Google Drive and others. These services can form a "shadow IT" organization that weakens your security and compliance posture.

Join us on June 15th to see how Accellion kiteworks provides a layer of compliance and control over these data sources, while increasing productivity of your employees. We will show you how:

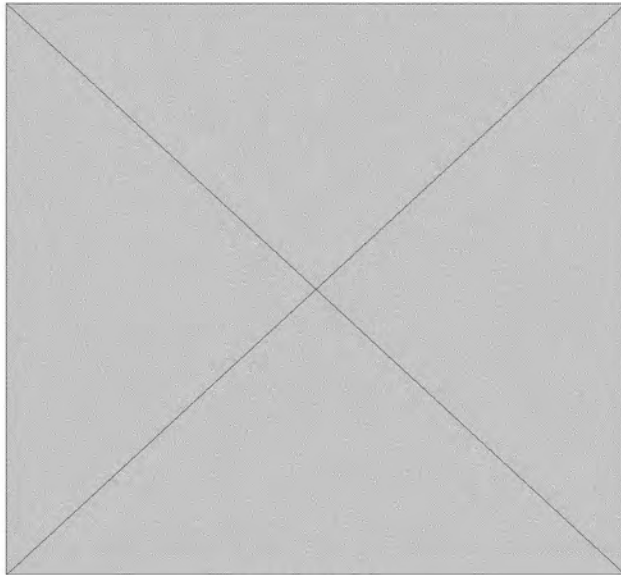
- kiteworks' provides a unified view for accessing ECM and cloud storage systems
- To securely share and collaborate on content with customers and partners using cloud storage systems
- To safely receive content sent by your customers and partners through Dropbox in a compliant manner

Reserve My Seat!

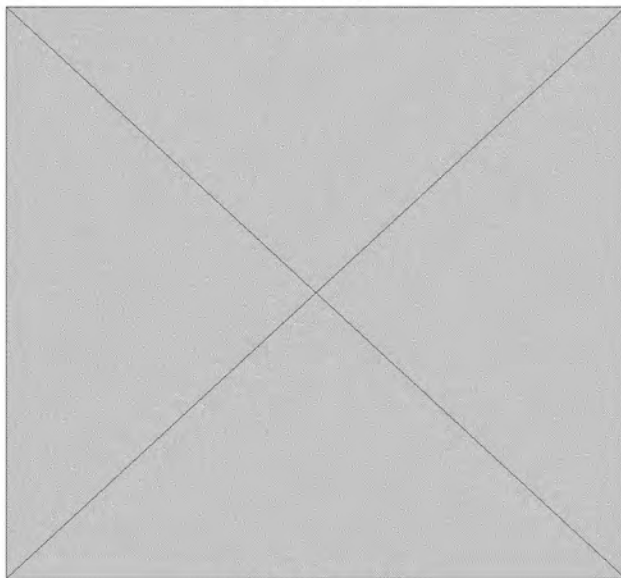
REGISTER NOW

Your Accellion Presenters:

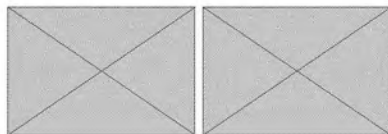
Bob Ertl
Sr. Director, Product Management



Accellion



Cliff White
Chief Technology Officer
Accellion





To: Flynn, Mike[Flynn.Mike@epa.gov]
From: CyberSecurity Executive Order
Sent: Thur 6/1/2017 5:08:20 PM
Subject: [SPAM] Register: Implementing the President's Cybersecurity Exec Order (EO) Training Workshop

**Please Review and Forward to
Your Government Executives, Managers and Staff
Who Play a Part in Agency Cyber Security Management or Implementation**

Potomac Forum Training Workshop

**Implementing the President's
Cybersecurity Executive Order (EO)
Training Workshop**

*A "How To" Workshop to Implement the
Requirements of the EO and its Reporting Requirements*

Date: Wednesday, July 12, 2017

Early Bird Reduced Registration Fee Until June 17th

Sponsored by:

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the leader in high quality training since 1984

www.PotomacForum.org

(703) 683-1613

info@PotomacForum.org

Location of Workshop:

**Willard InterContinental Hotel
Washington, D.C.**

**Potomac Forum Training Workshops are 100% Educational
and NOT Sales or Marketing Events**

**Workshop for Government & Industry Partners
Press is Not Permitted to Encourage
Candid Discussion in our Learning Environment**

**Keynote:
Dr. Ron Ross
NIST Fellow
Author of the NIST Risk Management Framework (RMF) and
Numerous NIST Cyber Security Publications**

Government Speakers are being approved for participation by their Agencies.

Potomac Forum Workshops are 100% educational programs and not sales or marketing events!

Overview:

This workshop will focus on the President's EO on Cybersecurity and discuss its requirements. A key requirement is the implementation of NIST's Cybersecurity Framework (CSF). We will present an understanding of the CSF and NIST's Risk Management Framework (RMF) which is a key component of the CSF. The CSF and RMF are critical for the federal government in its efforts to mitigate risk within enterprise information systems. The workshop will provide detailed guidance on the integration of the CSF and RMF into a holistic Cybersecurity solution. In addition, the workshop will address the EO reporting requirements for the first 90-day report and the other reports identified in the EO.

Hear from industry experts and government officials tasked with implementing robust cybersecurity and risk management strategies along with learning how NIST's CSF and RMF can be effectively implemented to reduce the risk of cyber-attacks. Listen to a government panel of CIOs and CISOs to understand the challenges they are facing on a day-to-day basis and how implementation of NIST's CSF and RMF helps them identify the risks and what it takes to mitigate those risks. Gaining insights from the panel and peer interactions at the workshop should be invaluable in implementing the President's EO and moving the needle forward in improving federal cybersecurity.

What You Will Learn:

- **The approach used by the NIST RMF**
- **The value of the integration of the NIST RMF with the NIST**

CSF

- **Development of agency Risk Management Strategies**
- **Changes in federal information system authorization requirements and guidelines**
- **Guidance into what agencies can expect from the NIST RMF and new CSF processes**
- **Importance of Risk Assessments (RA), Security Control Assessments (SCA), and Security Testing & Evaluation (ST&E)**
- **Security control categorization and how it is used to manage risk**
- **NIST SP 800-53A, Guide for Assessing the Security Controls in Federal Information Systems and Organizations: Building Effective Security Assessment Plans; NIST SP 800-37 Rev. 1 Guide for Applying the Risk Management Framework to Federal Information Systems: A Security Life Cycle Approach and NIST SP 800-39 Managing Information Security Risk**
- **Reporting Requirements for the Executive Order**
- **Best Practices for Responding to the Executive Order**

Why You Should Attend

- **Review the key steps within the NIST RMF and CSF**
- **Obtain practical knowledge of how NIST RMF and CSF are incorporated into information system security**
- **Gain insight into conducting and implementing NIST RMF and CSF in your organization**
- **Collect information on how NIST frameworks can be leveraged to enhance the security of your organization**
- **Learn how risk management and cybersecurity are essential for regulatory compliance**
- **Learn from risk management, security and OIG colleagues in Federal, State and Local Governments**
- **Learn how other Agencies are responding to the EO**

Who Should Attend:

- **CIOs, CISOs and Staff**
- **IT security and risk management practitioners**
- **IGs and Staff**
- **Program Managers responsible for risk management**
- **Government Employees who want to better understand organization risk management**

- Executives who oversee risk management for the government
- All government executives, managers and staff who need to better understand risk management and implementing the President's Executive Order

CEUs Awarded Upon Workshop Completion

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- 1. Managing Government Records (RM) Training Workshop XIV**
Agency Self Assessments are in to NARA
-- How Can You Improve Your Scores?
Tuesday, June 20, 2017

- 2. How to Meet the Workforce Requirements of the President's
Executive Order 13781 Training Workshop**
**What Federal Executives, Managers, and Supervisors Need to Know to
Support the Goals of the Executive Order for Reforming the Federal
Government and Reducing the Federal Civilian Workforce**
Wednesday, June 28, 2017

- 3. Implementing the President's Cybersecurity Executive Order (EO)**
Training Workshop
**A "How To" Workshop to Implement the Requirements
of the EO and its Reporting Requirements**
Wednesday, July 12, 2017

**All Workshops at the
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400 North Washington Street, Alexandria, Virginia, 22314, USA

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Mark Beebe
Sent: Wed 6/7/2017 1:16:17 PM
Subject: [Webinar] SAP Business Blueprint Auto-Generation



Webinar: SAP Business Blueprint Auto-Generation

Business blueprints created in Solution Manager tell SAP how to implement your business processes. The more detailed and accurate the blueprint, the more you get out of Solution Manager. Simple enough, right? Unfortunately, no. Creating blueprints has traditionally been such a time consuming task that most organizations have given up on the idea.

But what if you could *automatically* create and update blueprints in SAP Solution Manager 7.2?

Join us on **June 21st at 10:00am CDT** (GMT-5) to learn how you can:

- Populate and update Business Blueprints automatically with Worksoft Analyze
- Leverage Blueprints to implement Business Process Change Analyzer (BPCA)
- Integrate the Worksoft platform with Solution Manager to provide a complete automated testing and risk management solution

[Register Now](#)



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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Home Performance Coalition
Sent: Mon 6/5/2017 11:47:08 AM
Subject: Conference Corner - Get involved at HPC California Regional & HPC National

**2017 HPC California Regional Home
Performance Conference & Trade Show**
November 14-15, 2017

Hilton Long Beach
701 W Ocean Blvd
Long Beach, CA

Registration coming soon!

GET INVOLVED AT #HPCALI17

**Session Proposals Open Thursday - Submit
Yours!**

The HPC California Conference will feature sessions to enhance your building science knowledge and skills, and share the most current information and best practices for weatherization and home performance operations, business and policy.

We will be accepting submissions for session proposals Thursday, June 8, 2017 until Friday, August 11, 2017.

Exhibit in California!

The trade show floor is the hub for demonstrating new products and techniques, providing immediate and future sales, as well as product research and test marketing. Check out the **HPC Prospectus here.**

2018 HPC National Home Performance Conference and Trade Show
April 23-26, 2018.

Philadelphia Marriott Downtown
1201 Market Street
Philadelphia, Pennsylvania 19107
GET INVOLVED AT #HPC18

Call for Proposals
NOW OPEN

The Home Performance Coalition is committed to bringing individuals and organizations together to build personal and professional development and connections, enhance knowledge and skills, and share the most current information and best practices for weatherization and home performance—at the National Conference and events throughout the year. [Learn more!](#)

Become a Conference Sponsor!

Sponsor this event and raise your company's brand awareness, support workforce development and publicly demonstrate your commitment to energy efficient, healthy, sustainable homes. Pick your level of involvement or become a coveted Host Sponsor. Check out the [HPC Prospectus here.](#)

Registration Coming Soon!

Connect with us

Home Performance Coalition
844.370.5748
[E-mail](#) | [Website](#)

Home Performance Coalition (HPC) | 1424 K Street NW, Suite 500, Washington, PA 20005

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: CyberSecurity Executive Order Workshop
Sent: Wed 6/7/2017 12:34:49 PM
Subject: [SPAM] Register: Implementing the President's Cybersecurity Exec Order (EO) Workshop

**Please Review and Forward to
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Potomac Forum Training Workshop
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government

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**2. How to Meet the Workforce Requirements of the President's
Executive Order 13781 Training Workshop**

**What Federal Executives, Managers, and Supervisors Need to Know to
Support the Goals of the Executive Order for Reforming the Federal
Government and Reducing the Federal Civilian Workforce**

Wednesday, June 28, 2017

**3. Implementing the President's Cybersecurity Executive Order (EO)
Training Workshop**

**A "How To" Workshop to Implement the Requirements
of the EO and its Reporting Requirements**

Wednesday, July 12, 2017

**All Workshops at the
Willard InterContinental Hotel
Washington, D.C.**

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400 North Washington Street, Alexandria, Virginia, 22314, USA

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Danielle Sikes
Sent: Mon 6/12/2017 8:32:36 PM
Subject: Folio: Eddie & Ozzie Awards Entry Deadline This Friday

Contact:
Danielle Sikes
Senior Marketing Manager, Folio:
dsikes@accessintel.com

Folio: Seeks Nominations for Annual Eddie and Ozzie Awards; Final Entry Deadline June 16

The Folio: Eddie and Ozzie Awards celebrate excellence in editorial and design across multiple markets. The prestigious awards program is the only one of its kind to honor both magazine and digital design and journalism in the association, b2b, consumer, regional, and non-profit sectors.

The final entry deadline is this Friday, June 16. Winners and honorable mentions will be recognized in New York City on October 11, 2017 during a celebratory luncheon at The Folio: Show.

For more information on the Folio: Eddie and Ozzie Awards, visit <http://www.FolioAwards.com>.

Categories Include:

EDDIES

- App (Magazine Replica)
- App (Native)
- Digital Edition
- Full Issue
- Newsletter (NEW!)
- Online Column or Blog
- Online Community
- Online News Coverage
- Online Tool
- Podcast (NEW!)
- Series of Articles
- Single Article
- Standalone Digital Magazine
- Use of AR/VR (NEW!)
- Use of Social Media
- Use of Video
- Website
- Editor of the Year
- Editorial Team of the Year

OZZIES

- App (Magazine Replica)
- App (Native)
- Cover
- Design, New Magazine
- Digital Edition/Digital Magazine Design
- Feature Design
- Media Kit
- Overall Design
- Redesign
- Site Design
- Supplemental Annual or One-Shot
- Table of Contents
- Use of Digital Imagery
- Use of Illustration
- Use of Photography
- Use of Typography
- Designer of the Year
- Design Team of the Year

To view a full list of categories, please visit <http://www.FolioAwards.com>.

For questions about the awards program or for assistance in entering, contact Jessica Coonan at folioawards@accessintel.com. For questions about sponsoring The Folio: Eddie and Ozzie Awards, contact Tania Babiuk at tbabiuk@accessintel.com

The Folio: Eddie and Ozzie Awards Luncheon is being held in conjunction with The Folio: Show, October 9-11—the magazine media industry's largest conference—designed to inspire innovations in content creation, marketing, sales, events, and ad ops. For more information, visit <http://www.FolioShow.com>.

About Folio:

Folio: is a multi-channel resource for the magazine and online media industry. Our primary mission is to help media companies generate revenue and increase audience engagement. For more information, please visit <http://www.FolioMag.com>.

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Patrick McLaughlin
Sent: Thur 6/1/2017 2:16:14 PM
Subject: Regulatory Update: A Roadmap for Comprehensive Regulatory Reform

Read the latest media and research from Mercatus on regulations.

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June 1, 2017

Top Features

Comprehensive Regulatory Reform: A Mercatus Policy Primer

Patrick McLaughlin, Jerry Ellig, and Michael Wilt | *Mercatus Research*

Regulation is a significant feature of modern government. Given the important values at stake, Congress and regulatory agencies should craft regulations with full knowledge of their results. Decision-making in the dark should not be an option. Regulation should be done intelligently, efficiently, and effectively. The current regulatory process fails to meet these basic requirements of good government, generating regulations that are sometimes ineffective and impose significant costs on businesses and consumers. This primer has identified specific, actionable steps Congress could take to accomplish comprehensive regulatory reform.



[Keep Reading](#)

Regulation and Economic Growth: Applying Economic Theory to Public Policy

James Broughel | *Mercatus Book*

Applied effectively, regulation can foster a thriving, competitive marketplace where innovation and technological progress flourish. Executed poorly, regulation can stifle creativity and learning and limit opportunities for all citizens. In this brief but authoritative work, James Broughel lays out a basic theoretical framework for understanding how regulations affect economic growth.



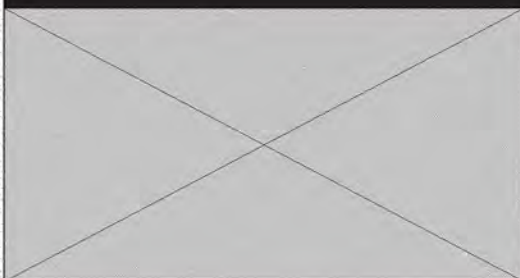
[Keep Reading](#)

Featured Event: Building a Regulatory Budget

Thursday, June 8, 2017 | 12:00 p.m. - 3:30 p.m.

Please join the Mercatus Center on Thursday, June 8 for a discussion on creating a functional regulatory budget in the US. Speakers include Senator Ron Johnson, Senator Mike Enzi, and experts from the policy and private sectors.

The event will address: how a regulatory budget can manage economic effects of regulation; lessons learned from other nations that have implemented and sustained a regulatory budget; the agency role in implementation; and what Congress can do to encourage a functional regulatory budget.



[Register Today](#)

SmartRegs

A Federal Fathers' Day Present: Higher Prices for Table Saws

Jerry Ellig

Cataloging State Regulations: Our Story Thus Far

Oliver Sherouse

What a Good Regulatory System Should Look Like

Jerry Ellig

How Do Regulations Affect Economic Growth?

James Broughel

[Read More](#)

Commentary

Will Trump's 2-For-1 Executive Order Lead to 'Dynamic Scoring' for Regulations?

Patrick McLaughlin and Stephen Strosko | *The Hill*

Patience Is Still a Virtue in the Regulatory Process

Jerry Ellig and Andrew Baxter | *Washington Examiner*

For "Big League" Regulation Cuts, Look to Canada

James Broughel | *RealClearPolicy*

Spring Cleaning for Regulations

James Broughel | *InsideSources*

[More Commentary](#)

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Home Performance Coalition
Sent: Wed 6/7/2017 11:46:26 AM
Subject: Your HPC Weekly News

HPC News & Perspectives June 7, 2017 | Issue 54

Who's Who At HPC?

Summer Series

Brian T. Castelli

This week we begin a series of blog posts called "Who's Who at HPC?" Over the next few weeks we will introduce you to HPC staff, featuring both personal and professional tidbits of information to help you get to know us better. Each staff member will answer the same questions, such as: What do you enjoy the most about your role at HPC?, What is your proudest accomplishment at HPC?, What do you enjoy doing outside of work?, and Tell us a fun fact about yourself we may not know.

Today we focus this series on
Brian T. Castelli

Brian is the President & CEO at HPC. He is the chief-decision maker on strategy and other key issues, representing HPC to policymakers, partners, sponsors and stakeholders. With over 30 years of national and international experience in the clean energy field, Brian is considered a global clean energy expert and participated in many energy programs throughout the world. Prior to HPC he was an Executive Vice President at the Alliance to Save Energy.

[Continue reading more about Brian here.](#)

Conference Happenings Weatherization Assistance Program

Featuring Women in Building Performance:
Danielle Putnam

Conference Hosts:

HPC develops new approaches to federal, state and local policies that promote growth in the residential energy efficiency sector through research, education, and policy analysis. HPC works with stakeholders to resolve the most serious issues facing the residential energy efficiency industry and is a focal point for collaborative efforts on data standardization, program cost-effectiveness testing, the valuation of home energy efficiency in the real estate market, and the integration of smart grid technology with residential building performance.

Danielle Putnam is the president of The Education Fund, a non-profit organization developed to bridge the gap between the government and the private industry. Putnam has experience in everything from business development and management to operations and technology. At The New Flat Rate, she handles the day-to-day operations, marketing, advertising, and quality control. [Read the full interview here.](#)

This is National Healthy Homes Month!

HPC is excited to partner with HUD's National Healthy Homes Month campaign. This month campaign, last week we discussed HPC's commitment to this cause by evidence of our health and comfort sessions presented at HPC/ACI conferences over the past 31 years. [Click here to read last week's post.](#)

Over the next few weeks, we will share a variety of IAQ & Healthy Homes sessions found at HPC conferences, demonstrating HPC's commitment to healthy homes via our work in projects, policy and education. We hope you also get involved and follow #NHMH2017 on twitter.

you! Over the next few weeks we will highlight a variety of issues and ways in which we are on your side. This is first in a series of posts called: "HPC Working For You."

THIS WEEK'S THEME IS HOME ASSESSMENT!

Today we focus this series on
The U.S. Department of Energy's

Weatherization Assistance Program (WAP)

In keeping with the Home Assessment, "Give your home a checkup" theme, we'd like to highlight the [Healthy Home Assessments: Rapid, Intuitive Visual Method of Risk Assessment](#). [Click here to read the full article by Deborah E. Miller, HPC's Dir. of Business Development.](#)

Plan to join us for the [2018 HPC National Home Partner News](#) & Trade Show in Philadelphia, April 23-26, 2018.

Vote for NEW EF Board of Directors!

Voting has begun for new members of the Efficiency First Board of Directors. EF Members - [LOG IN and VOTE today!](#)

CALLING ALL EXHIBITORS
Philadelphia Marriott Downtown
1201 Market Street
Philadelphia, PA 19107
+ Efficiency First has three diverse webinars! 1. Wednesday, May 17--Being an Advocate Part V: Managing Objections/Closing (Todd Fach). 2. Tuesday, June 6--Federal and State Policy Issues Continuing the Building Performance Institute/HPC's VP of Policy & Gov't Affairs, Kara Saul Rinaldi and HPC's Director of Policy & State Outreach, Joe Cullen. 3. Tuesday, June 20--How to "Green" Your Local MLS in Months, Not Years (Ryan Miller). Register here: Efficiency First members have unlimited, free access to live webinars and 100% replay access to past recorded webinars. If you aren't already a member, [join today!](#)

CALLING ALL PRESENTERS
The Call for Proposals is NOW OPEN!

Learn how YOU can get involved at Help Home Energy Magazine Go Digital HPC18.

After 20+ years of print publishing, Home Energy magazine is facing the same problem as all print media in a digital world. Home Energy would like to keep providing great content to its readership, and to reach new, younger subscribers. It will do that by shifting away from printing the magazine, upgrading its website, and becoming a digital publication. Naturally, all of this requires funding. [Continue reading more by Macie Melendez and learn how you](#)
bdittmar@homeperformance.org

Exhibit/Brand/Sponsor - Chris Docchio -
Director of Partner Relations
cdocchio@homeperformance.org

Introducing the 2017 HPC California Regional
Home Performance Conference in Long Beach,
Nov. 14-15,

Hilton Long Beach
701 W Ocean Blvd
Long Beach, CA

CALLING ALL EXHIBITORS

CALLING ALL PRESENTERS

The Call for Proposals will open Thursday.

Learn how YOU can get involved at
HPCali17.

Assessments. Read the full article here.

can help, donate and get involved.

**BPI's has a new Industry Pros Web Experience: www.bpi.org + Check out
this new WEBINAR: Create a Meritocracy; Pay for Performance**

*Today - Wednesday, June 7th, 2017 @ 3PM EDT/12PM PDT - Earn up to 1.5 BPI CEUs (Certified Professionals
must attend entire webinar to receive credit) Register now and attend!*

2017 North Carolina High Performance Buildings Conference

NCBPA invites you to attend their 2017 North Carolina High Performance Buildings Conference being held July 12 - 13, 2017 at the Charlotte Convention Center! This event brings together the people, products, policies and resources needed to design, build and maintain high-performance buildings in North Carolina.

Attend two full days of educational workshops, networking events and a packed exhibit hall. CEU opportunities, trade council meetings and more make this a great event for all levels of company staff. Learn more.

EM&V FORUM SUMMER WORKSHOP: COST-EFFECTIVENESS TESTING FOR NEXT-GENERATION ENERGY EFFICIENCY

The 2017 regional workshop on Cost Effectiveness for the Next Generation Energy Efficiency will bring together program administrator, implementer, industry, policymaker, evaluation and other stakeholders to share information and get inspiration about how cost-effectiveness can lead the energy efficiency industry into the next generation. This workshop will cover three "P"s: Principles of sound cost-effectiveness assessment; the current Practice of cost-effectiveness testing (non-energy impacts included); and the Promise of the new industry landscape (energy efficiency as an integrated resource, viewed in the context of broader energy policy, and new guidance on cost-effectiveness). June 15, 2017 - Register here and learn more!

Join the Premier Sharing Space for EE Professionals

...where members openly discuss topics concerning education, certification, field procedures, equipment, building science, energy modeling, envelope and mechanical design, building codes and standards, sales, marketing, and business systems in one of the most powerful collaborative sharing forums for home energy professionals. Learn more and become a member of the [Home Performance Forum](#) today.

Your Voice Matters! Join the Faces of EE.

To help us keep a strong momentum for energy efficiency funding, we hope you will consider participating in advocacy efforts for our industry. Sign up using this convenient [Google form](#) to indicate your specific interest. You are also invited to follow us on Twitter [@FacesOfEE](#), as we reveal the power of energy efficiency by highlighting "real people, real jobs."

Interesting Industry News

Solar Executive MBA Training

Access the tools, knowledge, and network you need to close solar deals, increase your bottom line, and grow your solar business. The Solar Executive MBA is technical, rigorous, and challenging. It's the most intense six-week course you'll ever find but also the most valuable. We developed it for leaders who are responsible for the financial details that drive solar projects. Access financial modeling tools and legal documents worth \$25k. [Register today!](#)

Energy Economist Says Paris Accord Withdraw Doesn't Mean Much For U.S. Energy

By Michel Martin, NPR - All Things Considered

3 June 2017

NPR's Michel Martin talks about the future of coal production with energy economist Robert Godby.

US Northeast states are devouring natural gas for electricity, and that's a problem for coal

By Javier David, CNBC

14 May 2017

The Northeast U.S. states — a vast market that generates and consumes much of America's annual electricity — is gradually using less coal to fire up its electricity plants.

First-Ever Comprehensive National Standard Practice Manual is Updated Guidebook for Energy Efficiency Cost-Benefit Analysis

BY Carina Daniels

May 19, 2017

The first-ever comprehensive national guide for utility-funded energy efficiency programs is now available to help utilities, regulators and other interested stakeholders make the best possible energy efficiency decisions for their jurisdictions

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Fernando DeLosReyes
Sent: Thur 6/1/2017 2:05:14 PM
Subject: Test Drive a Handheld Wireless Tester

40% of Wi-Fi networks are never tested, until they fail

Time is of the essence. If troubleshooting Wi-Fi networks takes too long, check out the new **AirCheck G2 Wireless Tester**. The AirCheck G2 Wireless Tester allows you to find the most common wireless problems with the touch of a button.

Watch this [2 minute video](#) on YouTube to see how this handheld wireless tool gives actionable insights to resolving issues such as “The Wi-Fi is Slow” or “Do we have rogue APs on our network?”.

If you'd like an in person demo of this dedicated wireless troubleshooting device just reply to this email, or give me a call. We can take a look at your network and ensure rogue devices aren't attacking your network.

I look forward to hearing from you,

Fernando DeLosReyes

Federal Account Manager
Handheld Network Test (HNT) Solutions
MOBILE: +1.520.249.1719

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Trustwave Government Solutions
Sent: Mon 6/12/2017 8:08:09 PM
Subject: Product Engineering has released SHATTER Knowledgebase 5.16!

Product Engineering has released SHATTER Knowledgebase 5.16!

ADPro 8.6.x & 8.7 customers can run ASAP to update the Knowledgebase. The components are uploaded to the Trustwave Government Support Portal at:

<https://trustwavegovt.force.com/support/login>

[Login | TGS Support](#)

trustwavegovt.force.com

TGS Support Customer Secure Login Page. Login to your TGS Support Customer Account.



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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Briauna Fisher
Sent: Thur 6/1/2017 1:24:55 PM
Subject: Think like a CFO - unlock the value of your PMO

How did one PMO learn to truly demonstrate value?



Traditional project-level KPIs don't do much to measure portfolio performance. Fortunately, there's rich performance data within your Microsoft PPM platform, just waiting to be unlocked. By tracking, measuring and analyzing the right portfolio metrics and benchmarks, you can truly begin to demonstrate the strategic value that your PMO delivers.

The right projects, executed the right way

Discover how ConEdison's Frank LaRocca established a culture of financial accountability to transform his organization's traditional PPM methodologies. Using a powerful combination of Microsoft's PPM platform and

In this webinar archive, UMT360 has established a dynamic approach that now delivers complete financial transparency across their \$2 billion portfolio.

- The importance of financial portfolio
- The value in reallocating project and program budgets dynamically
- How the right metrics can drive more effective budget utilization

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Jessica Placencia
Sent: Mon 6/12/2017 5:21:59 PM
Subject: Social Listening Webinar for Marketers & Communicators this Thursday

Sign up for PR News' Social Listening Webinar on Thursday, June 15.

Contact:
Jessica Placencia
Marketing Manager
PR News
jessica@accessintel.com

**PR News' Social Listening Webinar Will Discuss How to Develop a Social
Listening Strategy to
Inform Business Decisions and Focus Social Media Content**

New York, NY, June 12, 2017—PR News will host a webinar this Thursday, June 15 from 1:30 - 3:00 p.m. ET that will cover the tools and tactics communicators can use to efficiently practice social listening to collect audience data and brand sentiment from social media. The webinar will feature presentations from Angela Wells, Senior Director, CX, **Oracle**; Casie Shimansky, Social Media Manager, **Cisco**; and Daniella Peting, Global Co-Lead, **Motorola Solutions**.

To view the full agenda, visit: <https://www.prnewsonline.com/webinars/social-listening>

Social listening allows communicators to get a more accurate picture of audience sentiment and collect audience data to inform business decision, improve customer service and tailor social media content to increase engagement. This webinar will cover how to track conversations, extract the valuable mentions and synthesize the information collected.

Attendees will learn how to:

- Track conversations that don't tag or explicitly mention your brand name
- Focus on the most meaningful things being said
- Identify influencers
- Reduce response times
- Find opportunities for customer service
- Measure sentiment
- Draw conclusions that have important implications for your strategy

This interactive webinar will allow for real-time Q&A's to ensure specific questions are answered. To register for PR News' Social Listening Webinar on Thursday, June 15, visit: <https://www.prnewsonline.com/webinars/social-listening>.

Webinar attendees receive full access to speaker presentations along with a certificate of completion. The webinar access fee is based on location, not the number of participants, so each registration site can have multiple participants. For questions regarding webinar registration, contact Client Services at clientservices@accessintel.com.

The PR News Group at Access Intelligence, LLC is a go-to source that serves the communications and marketing community at corporations, agencies and nonprofits. With the launch of its weekly newsletter over 70 years ago, PR News has remained dedicated to supporting the growth of communicators all while keeping them abreast of the latest news affecting the industry. For more information, please visit <https://www.prnewsonline.com>.
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Subject: UBS: D: Poised to Heat Up this Summer
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If you have found our research to be valuable, we would appreciate your consideration for both the Electric Utilities and Alternative Energy categories in the upcoming Institutional Investor (II) survey.



Please vote for **Julien Dumoulin-Smith** in both categories: **(1) Electric Utilities & (2) Alternative Energy** in the 2017 All-America Equity Research Team II Survey. [How To Vote](#) | [Analyst Roster](#)

Dominion Energy Inc

Poised to Heat Up this Summer

[Please Click Here for the Full Note](#)

Busy month ahead for shares- but will it work?

We note a fast paced summer for Dominion approaches, with developments on Millstone nuclear slated for as soon as next Wednesday June 7 with the end of the CT legislative session (we remain a bit cautious given the tight vote in the Appropriations committee). Further, we see ACP in mid-July, a likely positive in moving forward, but more importantly followed by a September update on additional capex. This last piece is likely the element driving confidence in recent weeks, particularly when coupled with continued DPS growth confidence. We remain more cautiously positioned on shares here, but appreciate EPS revisions may indeed skew higher in the near-term.

Capex update this Fall could include a few more items to keep budget aloft

We see mgmt as poised to provide details on its nascent pumped hydro efforts in VA as well as delineate more formally its nuclear relicensing capex (upwards of ~\$ Bn over ~10-years). While some extent of this and energy capex is already disclosed, confidence appears on maintaining the \$3.5 Bn spend pace. We believe the added granularity on nuclear as well as some development on a new series of Pumped Hydro facilities should bolster the core utility spend further, with all of this being recoverable outside of base rates through legislatively approved riders. Also, in

tandem with EPS will be DPS growth

Hearings at Supreme Court on Biennial Review are the Key Summer Risk

While mgmt. appears quite confident, this is our most substantial concern through the near-term with a decision on the legality of the Biennial review process freeze ongoing. We emphasize the process back to a typical biennial ROE review process is unclear should the courts overturn the current freeze, potentially delaying any EPS impacts for several years still. Nevertheless, this would interject substantial uncertainty into future VEPCO EPS and could jeopardize the company's premium P/E multiple.

Valuation: Reaffirm caution on datapoints. Increase SoTP PT from \$75 to \$79

Despite the continued relative rally in shares, we see our \$79 PT, as largely reflecting a group P/E multiple as well as largely putting a P/E multiple on any potential associated utility debt. Further, we note the disconnect in midstream valuations vs. utilities as a more cautious backdrop. While mgmt. is admittedly poised to increase spend on the utility side of the house, we perceive more limited latitude on spend at Dom-Energy.

How do we view the shares overall?

We remain cautious on the shares given the potentially delicate schedule ahead and particularly after the recent share rally. We believe the main source of upside resides in mgmt.'s ability to deliver on its CapEx plan, principally refocusing on its core regulated utility growth prospects. With shares having recovered substantially since the 4Q guide down, we see D as once more at the highest P/E multiple stock in the sector despite its near-sector high leverage. We view this combination cautiously despite prospects for modest incremental EPS growth later in the year, as this will simply backstop the existing EPS commitments. Further, we note incremental energy projects appear to be already reflected in placeholder Energy capex already disclosed, making incremental updates less decisive to existing estimates. We note rotation back into the Infrastructure theme of late given challenges elsewhere to higher growth utilities, principally California, and see Dominion as a recent beneficiary of this trend as well as NextEra. We expect shares to see volatility return this summer as key debates are resolved, with a more cautionary skew given recent outperformance.

VA Supreme Court update: What to Watch?

SB 1349 in Virginia which aims to prohibit prudency reviews by regulators of ratepayer charges by Dominion Virginia Power while also freezing base rates through 2019 is being challenged at

the Virginia Supreme court. Opposition has taken issue with the ability for D to utilize rate adjustment clauses while simultaneously keeping base rates frozen. We note the recent hearings have largely debated whether or not the legislature has authority to remove the Commissions power and duty to regulate electric rates and to set rates themselves. Further focus stems on the court's interpretation of Article 9, Section 2 of Virginia law. The commission ordered testimony pointing out that a four year freeze of base rates set by the Commission could be considered a requirement under Article 9. We note base rates, as are, would stay frozen until 2019, with a need to trigger two subsequent biennial test periods in order to have rates reset (pushing out the reset well into the 2020's earliest). It remains unclear just how new rates would be implemented if interveners are successful. We caution that earned ROEs appear to be in excess of the authorized levels. Net-net, we see this as a generally cautious near-term datapoint given limited negative outcome embedded in investor expectations.

Scaling up Capex Further?

The question is just how far mgmt. can execute on its total capex plan. We emphasize that mgmt. is keen to maintain at least \$3.5 Bn in capex annually, and could well scale this further.

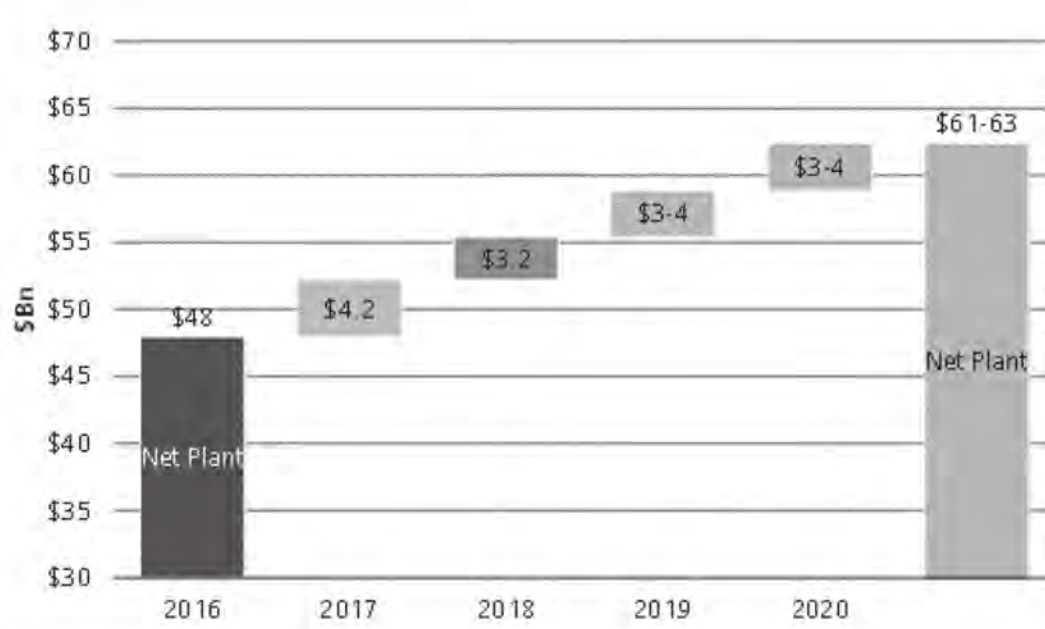
Utility: Pumped Hydro is a real opportunity

Mgmt. stresses it is evaluating what proposals to move forward with after having been engaged by entities across South-western VA to encourage economic development. While the size of any facility or *facilities* (plural) is likely only 200 MWs+, it is unlikely to compare to the other similar facility (Bath county at 2.4 GWs gross). We note that capex on selected sites could be more modest than greenfield pumped storage given existing caverns in mountains. We look for a more firm proposal in coming months, likely in tandem with usual ~Early September update. Any spend here would also be eligible for its generation rider treatment.

Nuclear reinvestment capital: getting more granular

We note that the precise cadence of its nuclear reinvestment program to extend the licenses of its four regulated units to 80-years from 60-years is unclear. We look for more precise spending with this plan, with the total at ~\$4 Bn over a 10+year period. We suspect this could add ~\$200 Mn+ to even the near-year periods as work on reinvesting in the units ramps up. We note prior updates had not seemingly explicitly included this given the lack of clarity on whether this would be recovered under a rider treatment (clarified in the legislature) given its base rate stayout.

Figure 1: Capex Additions – Can it Keep it Going?



Source: FactSet

ACP FERC EIS approval: Around the Corner in July

We look for the FERC EIS to come in the ~July 19th timeframe. We further note the first round of extension (from 1.5 to 2.0 Bcf/d) could be achieved only with compression, i.e. without the need for additional laterals. While the exact amount remains to be defined (the exit points chosen determine the amount of compression needed, and thus the cost of the extension), mgmt. sees significant growth potential given the size of the project. We note this is already fully baked into the \$3-4 Bn of annual CapEx in 2019/2020.

Could we get more gas midstream capex?

We note clear continued demand for additional spend with recent meetings pointing to greater detail in the coming months around the source of incremental growth within the Dom Energy segment, with specific focus on incremental pipeline opportunities. The question is the extent to which pipelines are expanded, compressor capacity location and ultimate delivery location substantially impact the outlook. We note that the latest discussions aside long distance pipelines remain on new power generation interconnection in Marcellus with many involving laterals to the existing network worth ~\$10's of Mns. Broadly, assuming a higher return on the ~40% equity investment in the \$1-2 Bn of incremental capital to be defined we see ~\$0.10-0.20 of EPS opportunity yet to be funded in the later portion of the five-year program.

What about the Integrated Resource Plan (IRP)? More solar on deck

Recent mgmt. meetings have noted additional appetite for Solar in VA given costs have come down enough that planning models are now picking Solar over Gas. We note the latest IRP reflects growth in solar of 3,200 MW with costs projected at ~\$50/MWh net of both REC value and the 10% ITC value back to customers. We emphasize the full extent of these efforts even

with a stepped down 10% ITC is unclear if it reflected in the capex budget – and provides support to a longer-term capex opportunity at VEPCO.

Update on Millstone: Will it succeed in the next week?

We look for whether mgmt. will succeed in coming week into June 7th expiration of the current legislative session. Shares could prove mixed into an update either way. While shares passed with some degree of support in the Joint state House & Senate Energy committee, the latest narrow passage out of the Appropriations committee by just one vote (and with the Chair labelling it as clearly a 'work in progress') bodes cautiously into this limited window for success. While we don't reflect this in our EPS estimates still, we note expectations had been dramatically higher on this prospect earlier.

What about more acquisitions?

We expect D to expand its DM subsidiary *without* dropping the coveted Cove Point assets in 2018. We believe there could be a desire to leverage the DM currency to acquire third party assets for a third time, avoiding a drop from the D parent. The latest example is the acquisition of STR and in turn the drop-down of the STR midstream portfolio, and before this its acquisition of SCANA's midstream portfolio. We see this as preserving the earnings power of Cove Point through the slower growth period at the Energy segment, while still accruing the benefits of any GP growth from acquisitions back to D.

Finally, should mgmt. drop down the Cove Point asset into DM in 2018, we note its previous commitment of three instalments does not necessarily state it would be ratable. We see this as being marketed determined and potentially smaller upfront, again, to preserve EPS at the parent.

Finally, what does this all sum up to? DPS Growth

The question is just where mgmt. will pivot its DPS policy as it seeks to preserve the 'best in class' commitment from last Fall. We include below our latest EPS and DPS estimates noting the implied Payout ratio at the higher end of peers.

Figure 2: Updated EPS Estimates

Dominion EPS by Segment	2014A	2015A	2016A	2017E	2018E	2019E	2020E	2021E
Dominion Virginia Power	0.86	0.83	0.78	0.93	1.08	1.13	1.16	1.26
Dominion Energy (incl STR)	1.29	1.10	1.14	1.33	1.63	1.86	2.00	2.09
Dominion Generation	1.88	1.89	2.26	1.67	1.75	1.73	1.58	1.58
Corporate (incl. Minority & HoldCo i	(0.60)	(0.36)	(0.39)	(0.33)	(0.53)	(0.41)	(0.35)	(0.49)
GP			0.00	0.03	0.07	0.12	0.19	0.35
Total UBS EPS Estimate	3.43	3.44	3.80	3.63	4.00	4.42	4.58	4.79
EPS Growth Rate				-4.5%	10.2%	10.5%	3.5%	4.6%
UBSe (Prior)	3.43	3.44	3.80	3.63	3.97	4.35	4.49	
Consensus as of 5/31/17				3.64	4.04	4.26	4.51	
Mgmt Guidance								
6-8% EPS Growth				2017 Midpoint	3.87	4.16	4.35	4.61
6-8% EPS Growth				3.65	3.94	4.26	4.60	4.97
6-8% EPS CAGR in 2017-2020								
DPS (UBSe)	2.40	2.59	2.80	3.05	3.33	3.63	3.95	4.27
Payout Ratio	70.0%	75.4%	73.6%	84.0%	83.1%	82.0%	86.3%	89.7%
DPS Increase	6.7%	7.9%	8.7%	9.0%	9.0%	9.0%	9.0%	8.0%
Consensus DPS				3.02	3.29	3.57		
Consensus Payout Ratio				83.0%	81.4%	83.8%		

Source: Company Filings, FactSet, UBSe

Update on PJM auction results: net-neutral now to capacity price shifts

We see the PJM results as a modest impact on Dominion overall. While the company will be slightly net long on capacity once the Greenville CCGT reaches COD, with demand and load roughly similar the net impact will be roughly neutral. We emphasize capacity is recovered through base rates, i.e. rate cases (we note the company is currently under a rate freeze) and not under the fuel rider which could therefore cause an insignificant earnings lag.

Updated Valuation: Increase PT to \$79

We include below our updated SOTP, maintaining our Neutral rating albeit with our price target below current shares. We increase our price target by \$4 to \$79/Sh; main factors contributing to the increase in PT include:

- Marking to market our commodity assumptions to reflect the latest power and gas forward curves: ~\$0.50/Sh
- Marking to market our peer P/E multiple from 17.1x to 17.8x: ~\$2.50/Sh
- Including \$400 Mn of CapEx at VEPCO related to pumped hydro: ~\$1.00/Sh

Figure 3: Updated Valuation – Moving PT to \$79

Dominion (D) Sum of the Parts Analysis - UBSe						
	2020E Adj. EBITDA	EV/EBITDA			Enterprise Val	
		Downside	Base	Upside	Downside	Base
Dominion Merchant Generation	376	5.0x	6.0x	7.0x	1,882	2,258
Hedge Value	-	5.0x	6.0x	7.0x	-	-
Dominion Energy (ex-UDCs)	2,186	11.0x	12.0x	13.0x	24,043	26,229
Dominion Midstream Partners	(564)	11.0x	12.0x	13.0x	(6,205)	(6,769)
Dominion Retail	63	4.0x	5.0x	6.0x	251	314
Total / Implied	2,061	9.7x	10.7x	11.7x	\$ 19,970	\$ 22,031
Dominion Midstream Value						
LP Value						
LP Shares Owned (as of Dec 2016)						50.48
Value per Share (Current Market)						29.15
Total Value (\$ Mn)						1,471
GP Valuation						
NPV Value through 2050 (\$ Mn)						1,336
Discount Rate (Using CAPM + GP Premium)						9.3%
Less Total Dominion Net Debt (2020E)						(36,212)
netting VEPCO-associated debt (Utility Only)						12,020
netting VEPCO debt allocated to HoldCo (assuming lever up to 60% debt/cap)						3,593
netting Gas LDC-associated debt (Holdco Only-STR Gas)						1,400
netting Gas LDC-associated debt (Opco Only-STR Gas)						1,007
netting Gas LDC-associated debt (Opco Only)						1,790
Solar Debt (UBSe)						1,034
Netting DM Debt (2020E)						1,983
Add: NPV of Merchant Generation Hedges						-
Net Energy/Generation Debt						\$ (13,385)
Dominion Energy, MLP, Merchant Generation, and Retail					\$ 9,392	\$ 11,453
Current Number of Shares outstanding (2020E)					620	620
Dominion Energy, MLP, Merchant Generation, and Retail per Share					\$ 15.15	\$ 18.47
	Peer P/E Multiple	17.8x	Premium	1.0x		
Dominion Delivery	2019 NI	P/E Multiple				
Electric	319	17.8x	18.8x	19.8x	5,684	6,003
Transmission	392	17.8x	18.8x	19.8x	6,975	7,367
Dominion Generation-Utility	1,005	17.8x	18.8x	19.8x	17,897	18,903
Total VEPCO Net Income	1,717	17.8x	18.8x	19.8x	30,556	32,273
Value per Share					\$ 49.28	\$ 52.04
Gas Distribution LDCs						
Questar Gas (incl. \$1.4 Bn HoldCo debt)	54	17.8x	18.8x	19.8x	963	1,018
East Ohio	202	17.8x	18.8x	19.8x	3,603	3,806
Hope Gas	11	16.8x	17.8x	18.8x	178	188
Total Gas Distribution Net Income	267	17.8x	18.8x	19.8x	4,744	5,012
Value per Share					\$ 7.65	\$ 8.08
Current Number of Shares outstanding					620	620
Dominion Regulated Utilities SOP Value (\$/sh)					\$ 56.93	\$ 60.13
Total Equity Value per Share					\$ 72.00	\$ 79.00

Source: Company Filings, UBSe

What about HoldCo Debt? Netting out the Utility Debt SOP Scenario

In the scenario below, we net out \$1,400 Mn and \$3,593 Mn of debt allocated to VEPCO and Questar, respectively, instead of capitalizing it. Accordingly, we are also removing the interest impact from the Utilities net income. As such, our regulated utilities SOP value goes down from ~\$60/Sh to ~\$55.50/Sh.

Figure 4: SOP Scenario: Netting out net debt

Dominion (D) Sum of the Parts Analysis - UBSe						
	2020E Adj. EBITDA	EV/EBITDA			Enterprise Value	
		Downside	Base	Upside	Downside	Base
Dominion Merchant Generation	376	5.0x	6.0x	7.0x	1,882	2,258
Hedge Value	-	5.0x	6.0x	7.0x	-	-
Dominion Energy (ex LDCs)	2,186	11.0x	12.0x	13.0x	24,043	26,229
Dominion Midstream Partners	(564)	11.0x	12.0x	13.0x	(6,205)	(6,769)
Dominion Retail	63	4.0x	5.0x	6.0x	251	314
Total / Implied	2,061	9.7x	10.7x	11.7x	\$ 19,970	\$ 22,031
Dominion Midstream Value						
LP Value						
LP Shares Owned (as of Dec 2016)						50.48
Value per Share (Current Market)						29.15
Total Value (\$ Mn)						1,471
GP Valuation						
NPV value through 2050 (\$ Mn)						1,336
Discount Rate (Using CAPM + GP Premium)						9.3%
Less Total Dominion Net Debt (2020E)						(36,221)
netting VEPCO-associated debt (Utility Only)						12,020
netting VEPCO debt allocated to HoldCo (assuming lever up to 60% debt/cap)						3,593
netting Gas LDC-associated debt (Holdco Only-STR Gas)						1,400
netting Gas LDC-associated debt (Dpco Only-STR Gas)						1,007
netting Gas LDC-associated debt (Dpco Only)						1,790
Solar Debt (UBSe)						1,034
Netting DM Debt (2020E)						1,983
Add: NPV of Merchant Generation Hedges						-
Net Energy/Generation Debt						\$ (13,394)
Dominion Energy, MLP, Merchant Generation, and Retail					\$ 9,383	\$ 11,444
Current Number of Shares outstanding (2020E)					620	620
Dominion Energy, MLP, Merchant Generation, and Retail per Share					\$ 15.13	\$ 18.45
Peer P/E Multiple: 17.8x Premium: 1.0x						
Dominion Delivery	2019 NI	P/E Multiple				
Electric	401	17.8x	18.8x	19.8x	7,139	7,540
Transmission	392	17.8x	18.8x	19.8x	6,975	7,367
Dominion Generation-Utility	1,005	17.8x	18.8x	19.8x	17,897	18,903
Total VEPCO Net Income	1,798	17.8x	18.8x	19.8x	32,011	33,810
Value per Share					\$ 51.62	\$ 54.52
Gas Distribution LDCs						
Questar Gas	86	17.8x	18.8x	19.8x	1,530	1,616
East Ohio	202	17.8x	18.8x	19.8x	3,603	3,806
Hope Gas	11	16.8x	17.8x	18.8x	178	188
Total Gas Distribution Net Income	299	17.8x	18.8x	19.8x	5,311	5,610
Value per Share					\$ 8.57	\$ 9.05
Holdco Debt Allocated to VEPCO					(3,593)	(3,593)
Questar Holdco Debt					(1,400)	(1,400)
Total Holdco Debt (\$Mn)					(4,993)	(4,993)
Value per Share					\$ (8.05)	\$ (8.05)
Current Number of Shares outstanding					620	620
Dominion Regulated Utilities SOP Value (\$/sh)					\$ 52.14	\$ 55.52
Total Equity Value per Share					\$ 67.00	\$ 74.00

Source: Company Filings, UBSe

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Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	less than 1%	less than 1%
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Entergy Corp.

Just What Are the Key Debates?

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What are the Key Debates? AMI, Nuclear Divestment, and DPS Growth

In short, AMI progress in coming months as testimony is delivered in coming weeks from Staff, the shift out from EWC (what kind of NDT 'top off' might be needed?), resulting dividend growth reacceleration (as the top end of the payout ratio at 75% is achieved), and a further debate on revaluation to a fully regulated utility framework remain the key debates. We note lingering concerns on nuclear capex recovery and execution on the sustenance plan remain a further, albeit seemingly abating risk.

The focus is now on ridding itself of the legacy nuclear liabilities

Mgmt's near-term goal remains just how and at what cost will mgmt. prove able to rid itself of the NDTs and associated liabilities to retire retired and to be retired nuclear plants, akin to the Vermont Yankee deal it inked recently. While mgmt's current FCF projections through the 5-year period indicate a cumulative ~\$45 Mn loss, the goal remains to both top-off the NDTs prior to handing them over to any potential buyers (a negative impact to projected FCF) while also aspiring to source incremental cost reductions to drive towards a largely ~Break-even cumulative projection. We look for details in coming quarters around any prospective success in structuring

such a deal for assets to be retired. We see this as more firmly closing out the merchant exposure and its gonging I/S and B/S impacts.

On the regulated side, its approvals for spend rather than the constructs

While regulators have historically authorized healthy ROEs and have attractive formulaic mechanisms, the critical question is the pace of ratebase growth and the ability to push ahead with the like of AMI spend. We see this as critical to future execution alongside recovery of legacy nuclear capex to driving confidence on achieving EPS growth targets.

Valuation: Maintain Sell, but nudging up our PT to \$73 (from \$70) on SOP

As management winds down EWC, we see an argument in favor of an increasingly regulated structure. That said, given continued merchant operations and uncertainty on ultimate FCF in NDT we believe investors will continue to use a more traditional valuation framework to net out prospective liabilities. We note our slight discounted P/E accounts for the relative opacity in disclosures. We look for DPS growth PE valuation, though we are not yet there today with a number of outstanding risks.

Framing the Key Issues Ahead for the Company

With many investors asking what's next, we attempt to frame the critical issues and strategies being pursued by management. Overall, the effort remains clearly oriented towards re-regulation and scaling down risk with the shutdown and now divestment of the legacy merchant nuclear portfolio. We see this divestment process as likely the next critical step, albeit unclear to what extent it is a positive. Mgmt's goal remains to offset the cost (effectively topping off of its NDTs) with additional savings to limit the impact to consumers. We note the transfer of the NDTs and retired plants to third parties could enable a further simplification of both the income statement and balance sheet.

Turning to the core regulated business, spend remains oriented towards several key buckets of recovery: the first being the nuclear reinvestment theme on its core regulated units. Resolution on spend either way should provide some view on being able to earn its Authorized ROE. Additionally, scaling opportunities around AMI in the near-term, but also an emphasis on owning its own generation appears a further long-term ambition. While the scale of the transition away from its legacy of purchased power remains opaque, we believe this could provide an element of growth above and beyond the organic opportunities afforded by the service territories core load growth trends.

Nuclear Decom –What now & How will ETR Get it off the Balance Sheet?

As the company wraps up the unregulated business, the question is just what happens to the nuclear plants. We see management as reticent to agree to a substantial liability but unlikely to choose to decommission the plants if at all possible. A reasonable 'top off' cost could be offset by a series of cost cuts, so management's roughly flatish (-\$45M) cash flow guidance over the forecast period could still remain unchanged. Management remains adamant that the EWC wind down will be a cash neutral event. Though perhaps an imperfect way of fixing the issue, we don't view this as largely problematic assuming that management can ameliorate the situation similar to Vermont Yankee, with an acceptable decommission counterparty and any necessary top off.

In terms of winding down the EWC business, the company is focused on mitigating some of the remaining risks on the way towards the exit. One of the key opportunities here would be the remaining coal plants – rather than investing in emissions controls, the company has more effective opportunities to source new generation investment and phase out existing plants as needed. For example, the St. Charles project is expected to save \$1.3B over the life of the plant. Additionally, buying distressed assets has been a further source of upside.

What's the Latest on the Generation Buildout?

We note some of the more recent developments below:

New Orleans: Entergy continues to push direct generation into the New Orleans region directly, as potential for storm damage keeps the city susceptible to a transmission line breakdown. In addition to an improvement in the peaking capacity, the company is looking to add 100MW of renewables in the region due at least in part to local demand for renewables (could we see more ratebased renewables along similar lines?). This follows:

Lake Charles: While the Lake Charles CCGT permitting took a relatively long time to complete, St. Charles by contrast should prove more forgiving as the company streamlines the processes. With the settlement agreement reached recently, we see items as moving forward here and the ALJ is currently taking it under consideration. Next steps would be to present it at the June B&E meeting.

Montgomery County: While the previous update had listed Montgomery county as under review, parties are currently working on a settlement. Texas appears generally supportive of further Texas-based generation (rather than buying out of state) so a settlement seems reasonable.

Figure 1: Updates to the regulated build

Generation Projects Overview	MW	OpCo	Estimated Cost (\$M)	Est In Service	Status
St Charles	980	ELL	869	2019	Under Construction
New Orleans	225	ENOI	216	2019	Suspended - with alternatives June/Jul
Lake Charles	994	ELL	872	2020	Settlement Agreement reached
Montgomery County	983	ETI	937	2021	Suspended - Working on Settlement
Washington Parish	361	ELL	TBD	2021	Purchase and Sale Agreement (CPN)
EA CT	250	EA	TBD	2022	Planning Assumption

Source: ETR, UBSe

Can ETR Shift from PPA's to Owned-Generation?

While there are some clearly enumerated opportunities above, we highlight ETR could yet find longer term optionality as other PPA's roll off. Though the company may include some of this already in the plan, we highlight the potential can be framed to a degree. Total TWh sold in 2016 include 112,595 GWh for retail and 11,054 for resale for a total of 123.649 TWh energy sales billed. Compare this to 9-10% in 2016 and 2017 listed in the 10K as total utility power purchased. While this may not necessarily be a PPA explicitly, it implies something in the range of 10-12 TWh of PPA's (this excludes any power purchased from MISO) using the basic math here. Total nameplate capacity for ETR's regulated fleet is ~24-25GW, so an average capacity factor would suggest a comparable % of replacement (1-2GW) which could be replaced. What isn't particularly clear is how much if any of the above chart would fall into this category.

AMI Is Next – Time to Play Catch-Up?

Entergy has a number of jurisdictions that need further AMI investment, and some areas (Louisiana) have even had some constituents lobby for faster deployment. On the other hand, the company does see real constraints to any increase in the speed of deployment and notes that a more measured pace of deployment could let the company learn from other best practices and realize the benefits from day 1. Although there are a number of moving parts to the filings across the 4 key AMI jurisdictions, we note Texas and Mississippi bear note in particular of late. The Texas legislature just passed the necessary law which will allow the full proceeding to move forward. In Mississippi, the latest AMI filing was approved as well. While there is always risk until the plans are fully approved, the company is relatively confident that these initial build-outs should proceed with relatively little issue. We perceive success in Louisiana and Arkansas as particularly relevant with testimony due shortly.

We provide a summary of the latest info elsewhere as well below.

Figure 2: ETR's AMI Regulatory Process

AMI Regulatory Process			
Op Co	Docket	Amount (\$Mn)	Proposed Recovery Method
EAI	16-060-U	\$208	2018 FRP
ELL	U-34320	\$330	Customer charge starting 2019, updated annually until meters are fully deployed
EMI	2016-UA-261	\$132	2018 FRP (Filing Recently accepted)
ENOI	UD-16-04	\$75	Phased-in customer charge starting 2019
ETI	n/a	n/a	Filing expected 4Q17 (Recently passed law)

Source: ETR, UBSe

What About Nuclear Costs?

We highlight on the latest call that the company called out an accounting change coming around how to account for nuclear decommissioning trust earnings. This should allow the company to mark to market any realized gains the growth in the various trusts. Net net, this could allow a ~3% growth, getting to ~flat by 2022.

Almost Time to Shift the Debt Treatment?

As ETR moves increasingly away from EWC and towards regulated operations we note our existing valuation grows somewhat more punitive compared to pure regulated peers. While there is clearly a healthy level of holdco debt which still gives us pause, management sees credit agencies as more comfortable with the balance sheet of late, noting that holdco leverage is not significantly higher than peers and could yet be utilized. Current metrics stand at 17.3x FFO/Debt (13-23x target), 4.4x Debt/EBITDA (3.5-4.5x target), and Parent/Total Debt at 21.1% (18-20% target). Given recent positive sentiment from the debt community and a shift increasingly towards regulated only, we note the potential for a further discrepancy among our treatment of the debt. Whereas fully regulated peers generally receive a pure P/E treatment, our valuation currently nets out the debt which proves to be more punitive.

Improving the Dividend Further Is Key; Need to Execute on Utility to support future trajectory

As ETR shifts to fully regulated businesses, continued growth of the dividend will be key. We see management as continuing to target growth in line with EPS growth, yet this will be tied to the wider utility growth. The company would most likely increase EPS at a faster rate initially then feather into a comparable DPS growth. There would be no specific inflection point other than when the payout ratio reaches an acceptably low level to increase DPS in line with EPS (presumably in the next year or two. Nonetheless, management would need to achieve growth above our estimates to maintain the stated range (75% max). The question is whether re-acceleration would happen *ahead* of achieving this 75% trend,

Taking Note of Consensus

While EPS revisions had trended steadily down into the end of the year, street has moved in a more positive direction of late. We have updated our estimates nominally as shown below as well – seeing less clear upside to estimates aside for one-off potential tax items later this year and beyond. We believe EPS volatility due to historic one-off items add to uncertainty on consistent steady execution at core utilities. We remain modestly below mgmt's Utility & Parent guidance ranges through 2019.

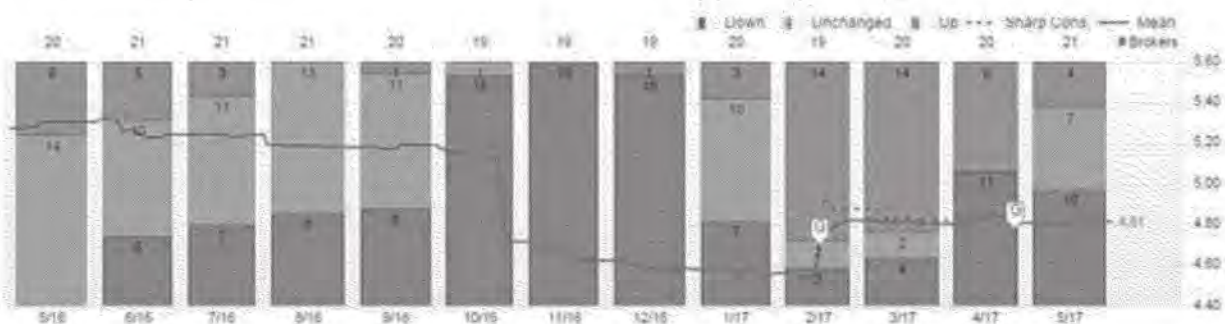
Figure 3: UBS EPS estimates

EPS by Segment	2015A	2016A	2017E	2018 E	2019 E	2020 E	2021 E
Regulated Utility	6.12	6.34	5.78	6.16	6.54	6.97	7.56
EW/Nuclear	1.03	2.01	0.57	0.48	0.19	(0.21)	(0.47)
Other	(1.15)	(1.24)	(1.42)	(1.52)	(1.73)	(1.87)	(2.29)
Consolidated EPS	6.00	7.11	4.93	5.12	5.00	4.89	4.80
<i>Prior UBSe</i>	6.00	7.11	4.80	5.02	4.99	4.90	
Guidance (4Q16)			4.75-5.35				
<i>Consensus (5/31/17)</i>			4.81	4.88	5.02	5.35	-
Adj. Utility Parent & Other							
UBSe			4.36	4.63	4.81	5.10	5.27
<i>Growth</i>				6.3%	3.9%	6.0%	3.2%
<i>High End Guidance Range</i>			4.55	4.90	5.30		
<i>Low End Guidance Range</i>			4.25	4.50	4.90		
Regulated Guidance Midpoint (4Q16)			4.40	4.70	5.10		
<i>UBSe vs. Midpoint</i>			-0.04	-0.07	-0.29		
Guidance Ranges							
			4.25-4.55	4.50-4.90	4.90-5.30		5.20-5.60
<i>Regulated Payout %</i>			81%	79%	78%	76%	75%
<i>UBS % Change</i>			3%	2%	0%	0%	#DIV/0!

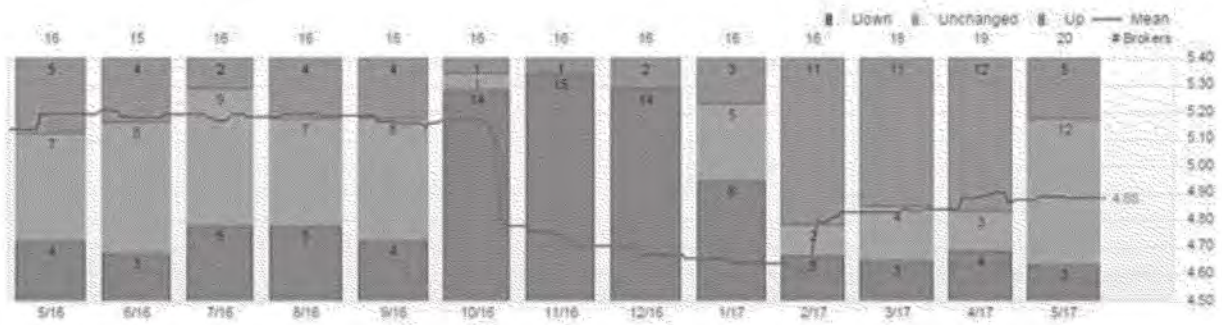
Source: ETR, UBSe

We highlight the latest consensus trends below, which have ticked up recently. The question is whether recovery of nuclear costs on the regulated costs can be resolved amicably along with support for its pending AMI dockets across its core geographies to support further revisions on earned ROEs (under-recovery on nuclear spend) as well as AMI capex (largely reflected in our & street projections we believe).

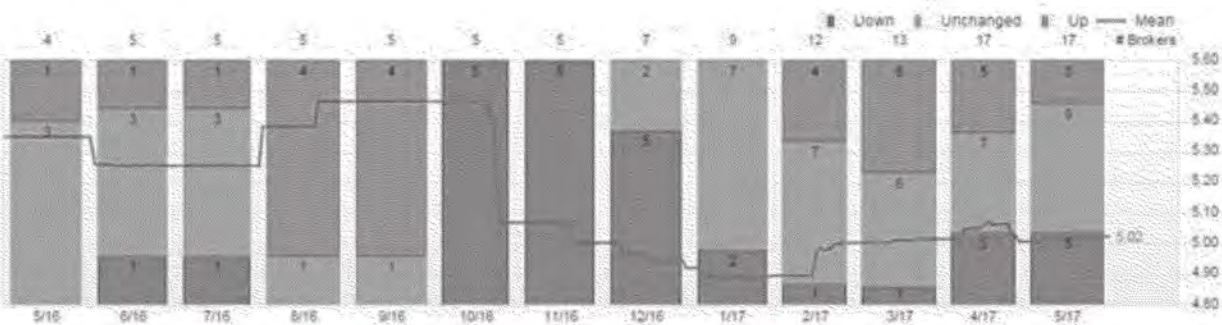
Figure 4: Estimate Revisions
2017 Consensus Ests



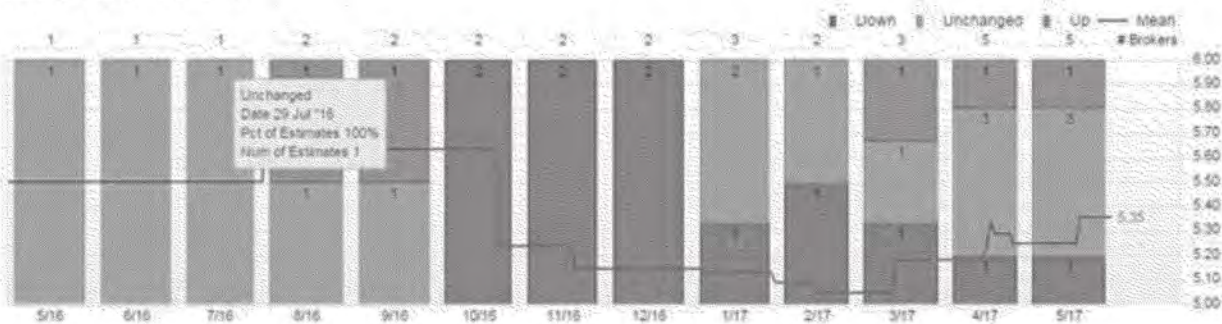
2018 Consensus Ests



2019 Consensus Ests



2020 Consensus Ests



Source: Factset

Price Target: \$73

We include our Sum of the Parts below. We have updated our P/E multiple from 17.1X to 17.8 which increased the PT by \$4/sh. Slight tweaks on the Utility estimates decrease our PT by - \$1/sh, for a net increase of \$3/sh.

Figure 5: Revised SOTP Valuation

Entergy Corp. Sum-of-the-Parts Valuation							
	2019E EPS	P/E Multiple				Equity Value per	
		Low	Prem/Discount	Base	High	Low	Base
Regulated Utilities		2019 Peers	17.8x				
System Energy Resources, Inc. (SERI)	0.44	16.8x	0.0x	17.8x	18.8x	7.33	7.76
Entergy New Orleans	0.26	15.8x	-1.0x	16.8x	17.8x	4.12	4.38
Entergy Mississippi	0.76	15.8x	-1.0x	16.8x	17.8x	12.01	12.77
Entergy Louisiana	3.28	15.8x	-1.0x	16.8x	17.8x	51.82	55.10
Entergy Texas	0.54	15.8x	-1.0x	16.8x	17.8x	8.49	9.02
Entergy Arkansas	1.29	15.8x	-1.0x	16.8x	17.8x	20.44	21.73
Other	(0.02)	16.8x	0.0x	17.8x	18.8x	(0.42)	(0.44)
Regulated Utility (Consolidated)	6.54					103.79	110.33
Parent Preferred Income	(0.69)	18.8x	0.0x	17.8x	16.8x	(13.02)	(12.33)
Other Parent Exp. (non-Pfd)	(0.62)	18.8x	0.0x	17.8x	16.8x	(11.74)	(11.11)
Total Utility Equity Value per Share	5.23	15.1x		16.6x	18.1x	\$79.03	\$86.89
Parent Drag	\$Mn	Weighting					
Senior Notes	(1,850)	100%		100%	50%	-1,850	-1,850
Drawn RCF	(700)	25%		25%	10%	-175	-175
Commercial Paper	(344)	50%		50%	25%	-172	-172
Cash and Cash Equivalent	13	100%		100%	50%	13	13
Total Parent Drag	(2,881)					-2,184	-2,184
2019E Shares Outstanding (Mn)						183	183
Total Parent Drag per Share						(11.91)	(11.91)
Merchant Generation Equity (Drag): NPV of FCF						(1,354)	(754)
EWC Net Cash (YE16)						-	388
Total EWC Drag						(1,354)	(366)
2019E Shares Outstanding (Mn)						183	183
Merchant Generation Equity Value per Share						(\$7.38)	(\$2.00)
Total Equity Value per Share						\$60.00	\$73.00

Source: Company filings, UBSe

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Sell	FSR is > 6% below the MRA.	15%	17%
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Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	less than 1%	less than 1%
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Source: UBS. Rating allocations are as of 30 September, 2016
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Unless otherwise indicated, please refer to the Valuation and Risk sections within the body of this report.

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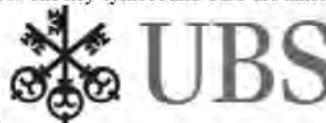
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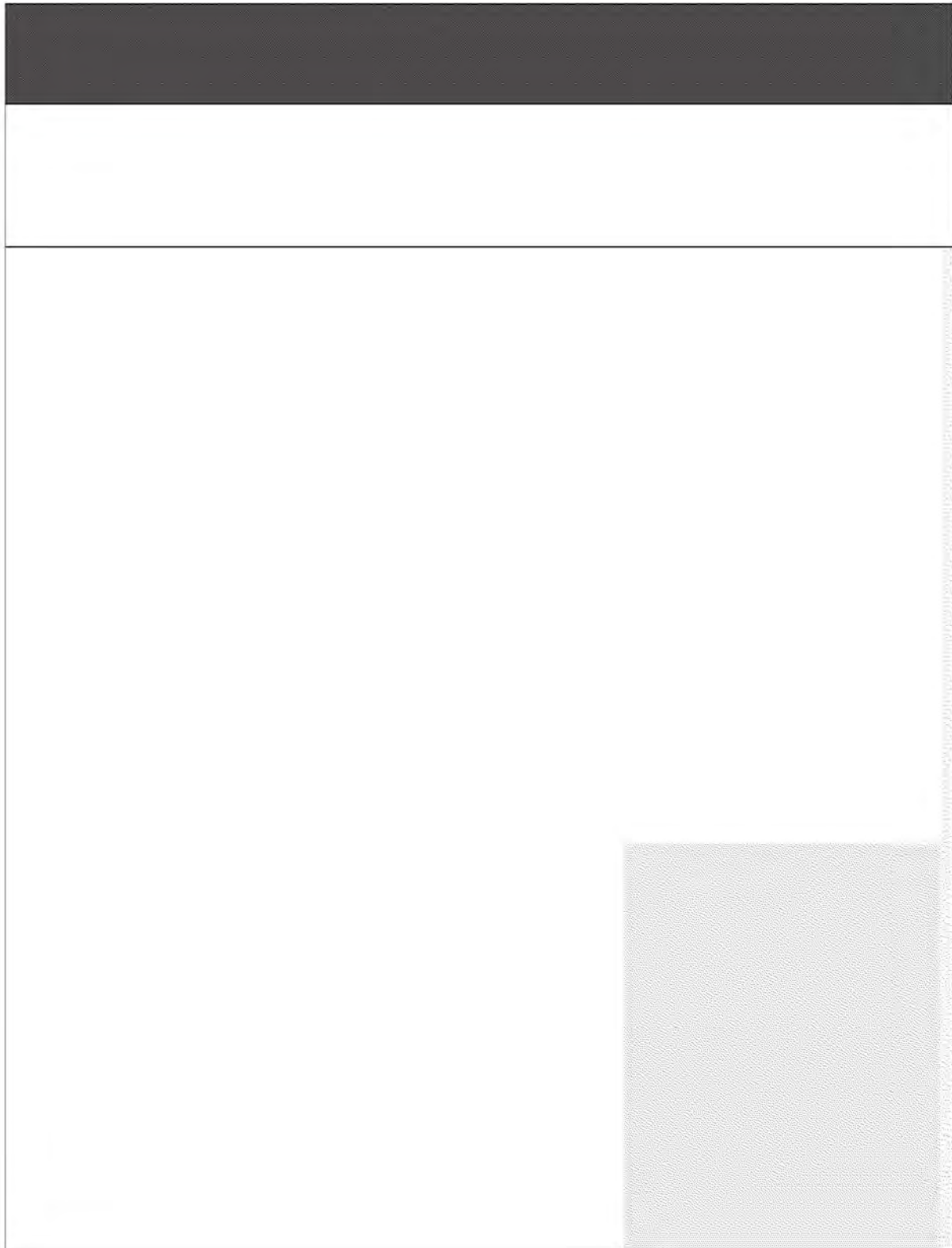
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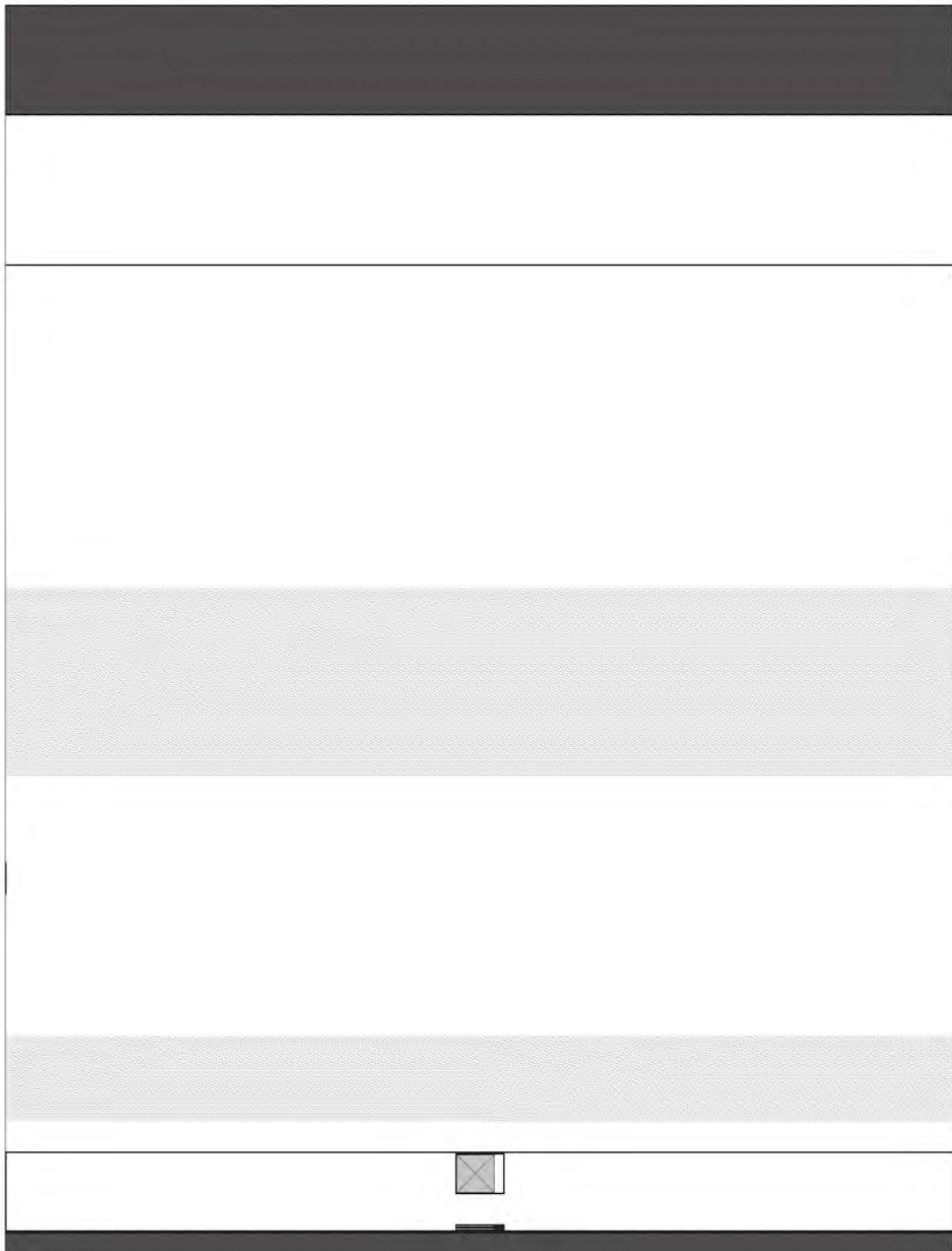
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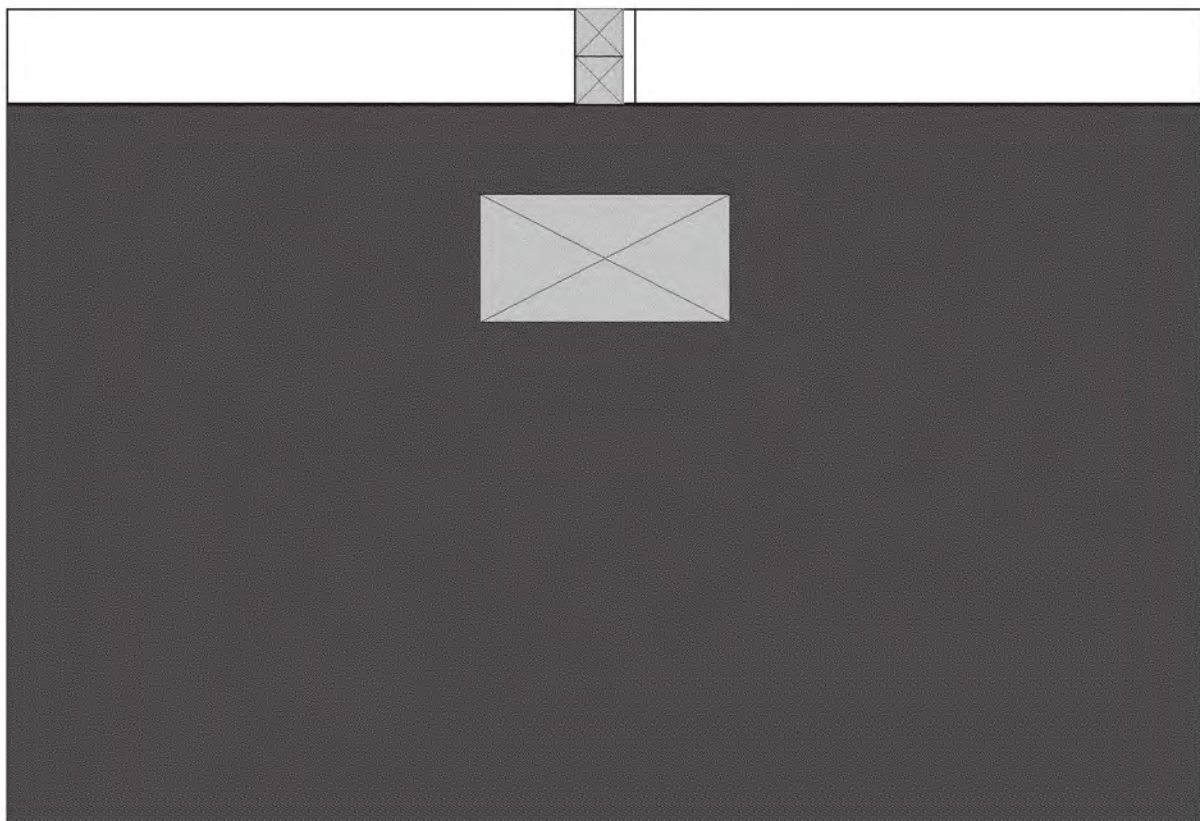
To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Cato Institute
Sent: Thur 6/8/2017 7:44:59 PM
Subject: Policy Forum: Financial Crisis and Reform, June 15





To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Cato Institute
Sent: Tue 6/6/2017 11:25:08 PM
Subject: You're Invited to South Africa at a Crossroads, A Cato Policy Forum





To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Mary Rose
Sent: Mon 6/12/2017 3:38:40 PM
Subject: June-July sessions for CyberArk On The Front Lines

Hi Mike,

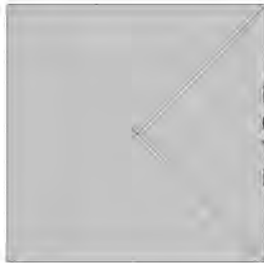
I wanted to remind you that several new sessions have been added to the On The Front Lines webcast series*:

June 13 - Another Endpoint? Servers Also Require Administrator Rights to be Secured!
June 20 - Privileged Account Security Inside Industrial Control Systems (ICS)
June 27 - Deploying a Complete CyberArk Environment in AWS with AMI Instances
July 18 - Secured Credential Scans: When Vulnerability Management is powered by Privilege

You can view the session details on the main web page. Simply scroll to the bottom of the webpage and use the Select Your Sessions button to register.

Regards,
-Mary

*On The Front Lines is a weekly webcast series offered every Tuesday at 2:00 pm ET by CyberArk Security Experts. Each 20 minute session covers hot topics and technical details related to security exploits involving privileged accounts and how to secure against such attacks.



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From: jerimiah.booream@ubs.com
Sent: Thur 6/1/2017 12:07:28 PM
Subject: UBS: Solar: A French Twist: Will the US Pull Out? (SPWR, FSLR, NEE, RUN, EXC)
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US Solar Flash

A French Twist: Will the US Pull Out?

Please Click Here for the Full Note

No More Climate Accord? Still Could Get Subsidies for Coal

President Trump will make an official announcement on the Paris Climate Accord at on Thursday at 3pm, according to the President's twitter. Media reports have suggested the President will withdraw the country from the voluntary non-binding pact, joining Syria and Nicaragua as the only three UN countries to opt out (vs 194 others signed on). While the accord is non-binding, the fulfilment of a campaign promise to pull out comes on the heels of the US international trade commission moving forward with a 201 filing to potentially raise solar panel prices domestically (which has already started to cause an uptick in panel ASPs of late) and would render solar less competitive. While the administration's recent actions suggest a continued focus on non-renewable generation, the question is whether the upcoming June 16 date could yet yield a further more explicit coal subsidy from the Department of Energy (DOE). We remain doubtful on both the scale and funding necessary to backstop coal on National security grounds. As noted in our recent visit to the AGA conference, coal plant shutdowns continue to be tied largely to high operating costs vs newer CCGTs or renewables, so we would expect the trend to continue regardless of the US status in the Paris agreement. Bottom line, we expect another wave of coal retirements to result from continued and ongoing cheap gas in Texas this Fall and follow in 2018 with announcements across PJM and the Midwest into the 2020's

given low PJM capacity prints of late.

What are the Practical Effects?

There are a number of companies actively lobbying to stay in the accord. Question remains just what strategy the administration will pursue to potentially unwind the existing Obama era regulations attempting to comply with the Supreme Court's earlier endangerment finding. The question is whether a more modest program is adopted focusing on efficiency rather than largely ignoring implementation altogether, leaving this potentially to be interpreted by a future administration. We continue to see risk to some developed renewables projects without robust protections in place for the PPA, though this is more specific to the 201 filing as panel input costs increase.

What is bipartisan? Likely nuclear support

We continue to bias our viewpoints towards a constructive outcome on both new nuclear via our Buy rating on SCG and for existing plants across the Northeast. We think investors fail to appreciate the potential for a combination of legislative and PSC support. We see further success across any range of states as boding well for EXC.

NEE's Analyst Day Prospects & its Record Storage Deal— from 11 to 4.5 c/kwh

We highlight in particular the recent news from Tucson Electric Power and NEER, which recently signed a 100MW solar + storage array at ~4.5 cents/kwh (solar only portion less than 3 cents). This is consistent and even ahead of recent commentary we've heard from EPRI suggesting solar+storage on the mainland US is below half the cost of the 11 cent/kWh solar+storage array being built on Hawaii. Given that the facility in Arizona would be online by 2019, we believe NEE has assumed some price deflation on both the solar and battery front, though to what extent any eventual 201 filing is included in projections remains unclear. We believe NEE is increasingly shifting its prospects towards solar into the 2020's both given the meaningful opportunity in FL but also to capture market share without wind PTCs. The critical question at the Analyst day later this month will be focused on just where its long-term growth in '21+ is derived rather than doubts/refocusing on near-year guidance in addition to prospects for the Oncor transaction still. Net-net, we're still bullish despite the latest rally.

3GW Renewable Auction to Launch in Spain

Following a relatively unsuccessful auction recently, Spain's Ministry of Industry announced it will hold an *additional* 3GW renewable energy auction 'before the summer,' noting that a large amount of wind and solar projects didn't qualify for the 3GW auction held two weeks ago. We highlight the previous auction cleared only 1.5MW of solar with wind being granted almost all the allocated capacity. We view this as generally supportive of the renewable space in Spain –

while we are still several years out the upcoming tariff reset for ABY in 2019 could yet be less of a concern going forward (though significantly low PPA prices in the auction could be read alternately by the govt as well in a more punitive outcome). With the risk of ABY's contracts being negotiated down in 2019 during its budget reconciliation process, we emphasize the continued support by the Ministry for renewables via the latest 3GW auction is a positive nonetheless. Recent commentary from the Ministry has noted that wind and solar is competitive at market prices and we see clear support for further renewable procurement on the back of the latest announcement for an *additional* auction. Further, we note the previous auction proposals were three times higher than the allocated capacity for the 2020 period which resulted in awards at €43/MWh, the lowest price ever for onshore wind in Europe.

Nevada RPS Moving to 80% by 2040

The Nevada Assembly recently passed a bill to increase Renewable Portfolio Standards across the state to 80% by 2040 vs. the current goal of 25% by 2025. AB 206 will now move to Senate Commerce Labor and Energy Committee for consideration. We see the latest move to increase RPS as a positive for utility scale PV developers. We note the bill is supported by clean energy advocates, environmental groups and businesses such as MGM Resorts, who exited NV Energy's service in favor of renewable energy.

NEE Signs Sub 3 Cent PPA in AZ

Tucson Electric Power recently signed a PPA for solar-plus-storage systems below \$0.03/KWh for 100MW solar array developed by NextEra. We note the pricing is significantly less than that of the latest combined storage facilities with recent PPA's in Hawaii being quoted at \$0.11/KWh. Further, we note a continued decline with last Fall's proposal from Clean Peak Standard pegged PPA's at ~\$0.145/kWh in 2015. We note the Tucson project is set to be online by 2019 and will be Tucson's largest dedicated renewable resource.

Solar modules in India to be taxed 5% - Not 18%

Solar modules in India are now going to be taxed at a rate of 5% vs the prior 18% that was announced under the Goods and Services Tax (GST) several weeks ago. The discrepancy essentially boiled down a typo in the document which was released. Although the increase to 5% is not an unequivocal positive vs the 18% previously, we do not see a significant impact on the longer term trend. Nonetheless, we believe ~90 cent installed utility scale solar would yet be susceptible to even minor changes in the panel pricing, so there could be some effect before the price hike resets

Engie Adds Sungevity EU business to ops

Engie is adding the European operations of Sungevity to its portfolio of distributed energy

offerings. The Netherlands based arm of the Sungevity was acquired for an undisclosed amount while the new US based part of the company's name was changed to Solar Spectrum. Engie will operate the EU arm in Belgium, the Netherlands, Germany and the UK. Engie has been building its DR business with the latest acquisition the company move into the resi sector. We note this is the first deal for both companies to address the solar market in Belgium, in which Engie currently has 2.8Mn of customers.

Takeaway's from EPRI

We met recently with the longer term policy Electric Policy Research Institute (EPRI) and noted both AMI and Storage are well in focus.

AMI Roll Out

As AMI rolls out across most utilities today, the larger communications network will be increasingly relevant and important. One of the key areas of focus would be standardized 'plug in' infrastructure; as technology changes, the plug in modules can be switched between distributed assets (for example, future hot water heaters could have a simple female plug interface) - this will be part of the shift towards a smarter distributed grid, yet who shares those costs isn't yet quite clear. Regardless, one of the other key areas of focus will also be the ability to communicate more effectively - ability to curtail will be key as penetration rates reach the mid single digits.

Storage

On the storage front, lithium ion is clearly the focus for the next decade but we appear to be largely beyond the 'overhype' phase and into implementation. Case in point was the Tesla Powerwall, which from announcement to implementation (one year later) reduced cost by half, doubled power, and cut the size by 60%. Yet the clearest example of large scale storage deployment of late is the Aliso Canyon situation, which was resolved much faster than expected: 1) RFP was issued in June 2016, 2) awarded in Sept 2016 and 3) final commissioning Jan/Feb 2017. While this is due in part to policy goal implementation, this still suggests batteries are being used as peaker replacements years ahead of schedule. EPRI is forecasting that storage at \$1,400/kW can be competitive with natural gas turbines by 200.

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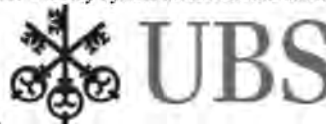
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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Project On Government Oversight
Sent: Sat 6/3/2017 1:59:18 PM
Subject: White House silence to lawmakers' requests raises questions

White House Silence to Lawmakers' Requests Raises Eyebrows, Questions

Is it frustrating to have a White House ignore inquiries from Members of Congress from the minority party? Yes. Is it new? On its face, not particularly. But there's a caveat.

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Saudi Arabia Lobbying Efforts in the Spotlight

Weak enforcement of foreign lobbying laws left US military veterans lobbying on behalf of Saudi Arabia in 2016 and 2017, unaware they were doing so — a multi-million dollar lobbying effort that included 22 different lobbying firms.

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White House Releases Ethics Waivers After Battle with OGE

The White House reversed its decision to fight the Office of Government Ethics over the release of government ethics records the day after POGO requested that it should proactively release copies of ethics waivers.

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A Special Counsel Shouldn't Keep Congress from Investigating

Congressional investigations can bring to light important information that would have been left unaddressed by a criminal investigation.

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How Not to Build a Ship: The USS Ford

The *USS Ford* is a monument to the Navy's and defense industry's ability to justify spending billions in taxpayer dollars on unproven technologies that often deliver worse performance at a higher cost.

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Strengthening Whistleblower Protections Still a Bipartisan Issue

Before Memorial Day recess and with little fanfare, Congress passed legislation to close a significant loophole in the Whistleblower Protection Act.

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Littoral Combat Ship Budget Games

This year's Pentagon budget originally included a small victory for taxpayers: it reduced its request for the troubled Littoral Combat Ship (LCS) to only one ship for \$1.2 billion.

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Trump Will Not Delay Launch of Retirement-Adviser Fiduciary Rule

The Department of Labor will let an Obama administration Wall-Street ethics rule take effect next week.

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The Pentagon's Silver-Bullet Hype Machine

In our post-9/11 environment, any failure to fund a possible silver bullet is deemed unpatriotic, and is too often cited as evidence that skeptics don't care about our men and

women in uniform.

[Read the column](#)

POGO in the News

Government Executive

Bill to Protect Whistleblowers Who Refuse to Break Rules Goes to President

The nonprofit Project on Government Oversight welcomed the bill as plugging a gap. "While there are more improvements necessary to strengthen whistleblower protections in this Congress," wrote POGO policy counsel Liz Hempowicz, "the passage of this bill closes a dangerous loophole, and we applaud Representative Duffy for spearheading this effort."

Government Executive

Effort to Save Agency from Budget Ax Draws Allegations of Wrongful Lobbying

Scott H. Amey, general counsel of the nonprofit Project on Government Oversight, said: "Engler's involvement on this save CSB lobbying campaign likely constitutes a violation of the federal anti-lobbying law. That said, I wouldn't expect Uncle Sam to move forward with a case against him because the lobbying doesn't rise to Justice's legal threshold of a 'substantial' or 'large-scale' expense of public funds."



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From: Nextgov
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Subject: Veterans Affairs to Adopt Same Commercial Health Records Platform as DOD

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From: jerimiah.booream@ubs.com
Sent: Thur 6/1/2017 11:30:08 AM
Subject: UBS: NRG: Moving to the Next Stage: Upgrading to Buy (\$20 PT)
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NRG Energy Inc.

Moving to the Next Stage: Upgrading to Buy

Please Click Here for the Full Note

Upgrading to Buy; Magnitude of cost cuts remains central to the story

We are upgrading NRG to Buy as the GenOn settlement and the latest PJM auction add clarity to the story while the cost cutting thesis remains intact and the major near term catalyst for the stock. While the deadline for the review is set for Aug 14, we expect more details to transpire sooner and could well see mgmt. update 2017 guidance in the coming weeks given the added clarity provided by the GenOn settlement. We continue to assume \$140 Mn of cost cuts related to unallocated expenses as well as the complete offset of the GenOn dis-synergies (~\$100 Mn) in our base case valuation and see further savings potential within the retail and renewable segments.

GenOn settlement constructive for NRG as move beyond legacy portfolio

We see the proposed GenOn settlement as positive, as the ~\$150 Mn net cash contribution (plus the assumption of the ~\$120 Mn underfunded pension plan) is lower than many investors feared given the tangible threats of substantial litigation, notably related to the Shared Services

Agreement and previous asset transfers. Under the settlement, NRG would be fully released from any obligations and the noteholders would drop all litigation with NRG. With the GenOn RSA now garnering more than 90% support among both GAG and GEI noteholders, we expect the proposed plan to be implemented within the next 4-6 months (see our full review of the RSA here).

PJM Auction now behind; adds further clarity

The recent PJM auction removes yet another uncertainty for the stock. Despite a headline RTO number down ~24% YoY, NRG ex-GenOn cleared most if not all of its assets, and the negative impact on revenue was mitigated by the exposure to higher-priced regions. Further, with the company splitting from GenOn, NRG is decreasing its exposure to lower-priced regions such as PEPCO and MAAC and becoming more of a EMAAC play (~84% of pro forma PJM capacity) which was able to retain its premium pricing in the last auction at ~\$188/MW-day (see our related notes here and here).

Valuation: Upgrade to Buy, Increase PT to \$20/Sh; awaiting guidance update

We are upgrading NRG to Buy and increasing our PT by \$1 to \$20/Sh as we mark-to-market our power and gas price assumptions and include the impact of the GenOn settlement (cash contribution and pension assumption). Our valuation remains based on a 2020E SOTP.

Buy (Price target US\$20.00)

NRG Energy Inc.

THESIS MAP report

PIVOTAL Q: What is the cost savings opportunity?
QUESTIONS

NRG's relative O&M and SG&A expenses seem larger than peers at first sight. While we believe this is partly explained by the differentiated business model (large retail operation, large renewable portfolio), we believe there is room to reduce these expenses. Specifically, mgmt. has indicated \$140 Mn of unallocated expenses will essentially go away in the 2018 timeframe. Additionally, mgmt. is confident it can offset a substantial portion of the synergy losses associated with the GenOn separation, which we estimate at ~\$100 Mn. While we include these two items in our base valuation as we see these as the most tangible cuts so far, we could see further savings potential on the retail and renewable front. We expect further clarity at the formal BRC deadline on Aug 14, if not earlier.

moreg

Q: Is the GenOn settlement a good outcome for NRG?

We believe the \$150 Mn net cash contribution and the assumption of ~\$120 Mn of pension liability as part of the settlement with noteholders is a positive for NRG as that amount is lower than many investors feared given the tangible threats of substantial litigation, notably related to the Shared Services Agreement and previous asset transfers. The main question remains the extent to which the company can cope with losing the Shared Services Agreement; the company remains confident it can offset a significant portion of the loss.

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UBS VIEW

With the GenOn overhang likely to be resolved in the near future given the 90+% RSA support, and with the latest PJM auction past us, we believe the story has become substantially clearer and now comes down to the findings of the Business Review Committee (BRC). We believe the stock has come down substantially from its highs in mid-April (see chart below) as mgmt. had been a bit more cautious on the magnitude of potential cost savings than many had anticipated on their recent 1Q call. While the shares have partially recovered since on the back of the broader power sector, we see incremental upside to NRG equity valuations given the more modest expectations baked into the shares.

EVIDENCE

Mgmt. recently provided its cost structure and comparisons, presenting the company favorably vs. peers on an O&M plus SG&A plus maintenance capex per kW basis. We see benchmarking as skewing constructively on cost cuts. We assume ~\$240 Mn cost savings in our base valuation.

WHAT'S PRICED IN?

The market is giving NRG little credit to its ability to achieve significant cost savings. At current prices, the market implies ~\$100 Mn of cost cuts vs. the ~\$240 Mn estimate in our valuation.

UPSIDE / DOWNSIDE SPECTRUM



Value drivers	2020E EV/EBITDA (\$Mn) Multiple	Cost Savings NYLD Value per NRG Shares
----------------------	---------------------------------	--

\$11

\$29 upside	8.7x	\$380	\$5.08
\$20 base	7.3x	\$240	\$4.81
downside	6.1x	\$100	\$4.54

Source: UBS

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What Do We Think of the Shares?

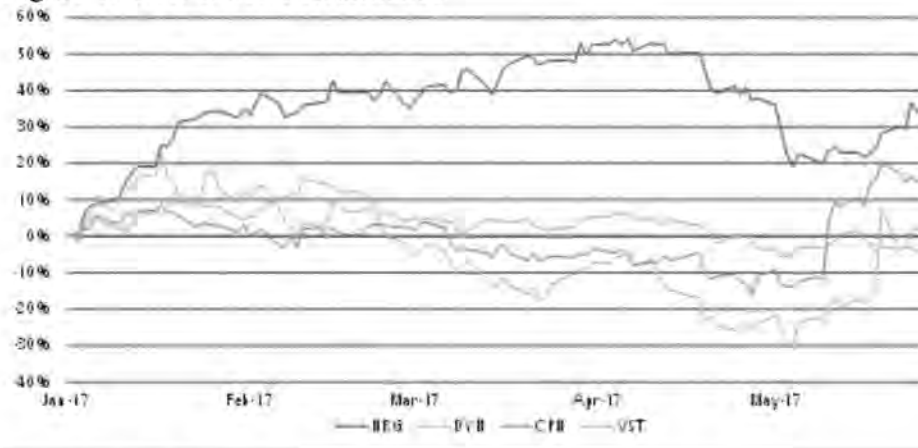
With the GenOn overhang poised to be resolved in the near future given the 90+% RSA support, and with the latest PJM auction past us, we believe the story has become substantially clearer and now comes down to the findings of the Business Review Committee (BRC), more specifically how much cost savings can be realized and what is the strategic direction for the Renewable business and ownership of NYLD. While the official deadline for the BRC remains Aug 14, we'd expect more tangible details to likely emerge within a shorter timeframe. Specifically, we look for mgmt. to formally update guidance and provide an updated view of their strategy and costs outlook ex-GenOn in the near term.

We believe the stock has come down substantially from its highs in mid-April (see chart below) as mgmt. had been a bit more cautious on the magnitude of potential cost savings than many had anticipated on their recent IQ call. While the shares have partially recovered since on the back of the broader power sector, we see incremental upside to NRG equity valuations given the more modest expectations baked into the shares. Indeed, current levels imply cost savings of only ~\$100 Mn vs. the ~\$240 Mn estimate in our valuation (the previously announced \$140 Mn of unallocated expenses, plus the offset of the GenOn dis-synergies, which mgmt. is confident it can achieve), and a far cry from the \$1 Bn estimate some investors have been contemplating.

Furthermore, we perceive an upside skew on NYLD. While mgmt. has expressed its commitment to the YieldCo and its renewable business thus far, we see pressures to divest the portfolio as part of the cost evaluation process, as a divestment would notably allow the company to cut on

development expenses (\$90 Mn in 2016). The question remains whether the company would be able to sell NYLD at a premium to current levels; as NRG uses the YieldCo as a growth platform, we doubt the company would part with NYLD unless a substantial premium is realized. We further note the recent consolidation in the space (TERP being acquired by Brookfield, FSLR selling its interest in CAFD, and ABG in the process of selling its ~42% stake in ABY) is also constructive.

Figure 1: YTD Stock Performance



Source: FactSet

What are the key issues that have been resolved?

We note the following developments in recent months that augur well for shares aside for the forthcoming guidance updates.

- **VST's retail value readthrough:** We see the healthy valuation embedded in shares reflects well upon confidence in retail valuations and presents a clear valuation readthrough back to NRG. We expect valuation methodologies and implied EV/EBITDA to converge over time. We note our Sell rating on VST is embedding the same underlying valuation multiples that our NRG upgrade below is embedded upon including potential cost synergies from both.
- **PJM de-risking:** With NRG's stand-alone prospects now largely oriented in ComEd, we see a certain degree of resiliency in pricing. Overall, we see an ability now to *expand* pback into PJM should the company so choose, enabling yet another strategic angle in the future. Any such move would likely be accompanied by corresponding corporate synergies and re-enabling of corporate synergies
- **Private value bid for IPPs?** We note that the bid for Calpine has reinvigorated a willingness to value IPP assets of all flavors; we see NRG as a potential beneficiary of this lower discount rate.
- **Focused on cost reductions—and market improvement:** We emphasize that both NRG and peers will continue to look at both O&M and SG&A, both improving their EBITDA

projections, likely in the near-term with updated pro-forma GenOn update (potentially in the next several days) but also in likely tightening up the ERCOT market. We note sparks have begun to shift back upwards as reflected in our updated estimates.

- **GenOn resolution:** We see shares as de-risked around the resolution here with both a figure well within Street expectations as well as seeming clean move away without protracted litigation around peripheral issues (such as previous asset transfers to NYLD, etc).

The Question on Cost Reductions

We emphasize cost reductions remain a clear focus for mgmt. into any updated guidance without GenOn as well as into the 2Q BRC update. We caution that updates could well involve both costs to achieve as well as an extended timeline to achieve ultimate savings. We also emphasize the importance of noting EBITDA and capital improvements in prospects. Further, we see asset retirements and divestments as critical to this overall repositioning, specifically around its Texas wholesale portfolio which appears to generate material negative FCF on an open basis. While we may not get the full cost updates in coming weeks with the pro-forma GenOn outlook this should provide an early indication of where these factors are headed. While mgmt. cautioned with 1Q on how it wanted to position its total cost cuts, we see our \$20 PT as predicated on simply the offsetting of GenOn costs as well as the \$140 Mn in Corporate SG&A, well below the contemplated cuts expected across the Street.

Updated Valuation: Increase PT to \$20/Sh

We are upgrading to Buy and increasing our price target by \$1 to \$20/Sh. We continue to include **\$240 Mn of cost savings associated with the BRC**, including the \$140 Mn of Corporate SG&A cuts as well as assuming the loss of GenOn will not result in any corresponding dis-synergies, which represents a ~\$100 Mn of improvement in cost structure to re-assign and reduce the allocated portion of the cost savings. Our valuation remains based on a 2020E SOTP. The \$1/Sh price target increase is explained by the following factors:

- Including the ~\$261 Mn cash contribution as well as ~\$120 Mn underfunded GenOn pension plan liability NRG will assume as part of the GenOn settlement.
- Marking-to-market our power and gas price assumptions to reflect the latest forward curves (resulting in 2020E EBITDA increase of ~\$120 Mn all else equal) and NYLD stock price increase from \$17.50 to \$17.78.
- Compared to our previous iteration, we are now formally excluding all GenOn-related items, including \$112 Mn of operating leases payments, \$89 Mn of 2019E EBITDA, the \$2,525 Mn of non-recourse debt, the \$929 Mn PV of operating leases, as well as \$1,034 Mn of cash. Note that this does not affect our valuation as we were already adding back the negative GenOn equity value (~\$3.50/Sh).

- We also combined our Northeast and EME lines (excluding the Trading segment, which we continue to capitalize at a lower multiple) under the new Northeast/Midwest line, with no effect on the overall valuation.

Figure 2: Updated SOTP Valuation

NRG Energy Valuation		2020E EBITDA		EV/EBITDA Multiple			Enterprise Value (\$)	
		Low	Prem/ Discount	Base	High	Low	Base	
Base IPP Multiple =				8.0x				
Texas	12	7.0x	0.0x	8.0x	9.0x	86	98	
South Central	41	7.0x	0.0x	8.0x	9.0x	290	331	
Northeast/Midwest	278	7.0x	0.0x	8.0x	9.0x	1,949	2,227	
EMMT (Trading)	32	5.0x	-2.0x	6.0x	7.0x	158	189	
West (All-Inclusive)	68	5.0x	-2.0x	6.0x	7.0x	341	409	
Renew (Ex-Ivanpah)	230	10.0x	-3.0x	11.0x	12.0x	2,297	2,527	
Retail Businesses (Reliant, GM, E+, D)	704	5.0x	-2.0x	6.0x	7.0x	3,522	4,227	
Other, Corporate, and Unallocated								
Synergies	506	6.0x	-1.0x	7.0x	8.0x	3,033	3,539	
Cost Savings	140		-1.0x	7.0x		-	980	
Total / Implied	2,011	5.8x	-0.8x	7.2x	8.6x	11,675	14,527	
Net Debt and Other: 12/31/16								
NRG Recourse Debt						(7,795)	(7,795)	
EME PV Operating Leases						(88)	(88)	
GenOn Settlement Cash Contribution						(261)	(261)	
GenOn Underfunded Pension Plan						(120)	(120)	
Other Conventional Debt (Non-Recourse)						(238)	(238)	
Solar Non-Recourse Debt (Ex. Ivanpah)						(1,736)	(1,736)	
Cash						939	939	
NPV of Equity using Hedged EBITDA Methodology						2,376	5,228	
Open Analysis								
Power Hedges	(92)	6.2x		7.2x	8.2x	(572)	(664)	
Total						(572)	(664)	
add NPV of Power Hedges							357	
NPV of Equity using Open EBITDA Methodology						2,160	4,920	
NYLD Class A & C Average Share Price						16.78	17.78	
NYLD Equity Value						1,434	1,520	
\$/share for NRG Energy (85Mn Shares Owned (B & D))						4.54	4.81	
Estimated 2020 Shares Outstanding						316	316	
Equity value per share						\$11.00	\$20.00	

Source: Company Filings, FactSet, UBSe

Updated EBITDA Estimates

We include below our updated EBITDA estimates, which we marked to market to reflect the latest power and gas forward curves. We are now formally excluding GenOn from our estimates starting in 2018. Additionally, we continue to expect 2017E EBITDA towards the low end of the range at ~\$2,740 Mn, plus an estimated \$70 Mn in cost savings.

Figure 3: Updated EBITDA Estimates

NRG Energy EBITDA (\$Mn)	2015A	2016A	2017E	2018E	2019E	2020E
Texas	470	204	86	30	8	12
South Central	118	136	123	36	45	41
Northeast/Midwest	1,034	711	239	326	336	310
West	102	219	120	71	68	68
NYLD Eligible	171	187	139	197	241	260
NYLD	720	899	920	797	796	796
<i>Guidance</i>	705	885	920			
Retail Businesses	739	811	705	700	702	704
<i>Guidance</i>	700-750	725-775	700-780			
<i>Less Hedge Monetization</i>			(98)			
Corporate, Other, and Unallocated Synergies	(97)	(77)	506	506	506	506
Cost Savings			70	140	140	140
NRG Adj. EBITDA (UBSe)	3,317	3,257	2,809	2,802	2,841	2,838
<i>Prior EBITDA Est. (UBSe)</i>	<i>3,376</i>	<i>3,257</i>	<i>2,782</i>	<i>2,975</i>	<i>2,867</i>	<i>2,747</i>
Consensus EBITDA Est. (05/30/17)			2,728	2,876	2,836	2,705
GenOn EBITDA Est. (Excl.)			144	228	89	(20)

Source: Company Filings, FactSet, UBSe

NRG Energy Inc.

UBS Research

PIVOTAL QUESTIONS

Q: What is the cost savings opportunity?

UBS VIEW

NRG's relative O&M and SG&A expenses seem larger than peers at first sight. While we believe

this is partly explained by the differentiated business model (large retail operation, large renewable portfolio), we believe there is room to reduce these expenses. Specifically, mgmt. has indicated \$140 Mn of unallocated expenses will essentially go away in the 2018 timeframe. Additionally, mgmt. is confident it can offset a substantial portion of the synergy losses associated with the GenOn separation, which we estimate at ~\$100 Mn. While we include these two items in our base valuation as we see these as the most tangible cuts so far, we could see further savings potential on the retail and renewable front. We expect further clarity at the formal BRC deadline on Aug 14, if not earlier.

EVIDENCE

The \$140 Mn of unallocated expenses classified as Corporate Overhead are for the most part associated with resi solar, a business NRG is winding down, thus giving us confidence these costs will be substantially reduced or eliminated by 2018.

WHAT'S PRICED IN?

The market is giving NRG little credit to its ability to achieve significant cost savings. At current prices, the market implies ~\$100 Mn of cost cuts vs. the ~\$240 Mn estimate in our valuation.

Cost analysis by segment

We include two main sources of cost savings in our valuation:

- The \$140 Mn of NRG Corporate expenses are unallocated expenses, which are largely associated with the Resi Solar business NRG is winding down. Other items include the stadium naming rights which expire in 2032. We stress these are the most tangible cost cuts so far as mgmt. assures these expenses will essentially go away in the 2018 timeframe. We assume the full \$140 Mn of savings in our base valuation.
- The \$208 Mn of GenOn SG&A cost is mainly composed of the ~\$193 Mn shared services payment, and we estimate ~\$100 Mn of that is NRG cost allocated to GenOn. With the company splitting from GenOn, mgmt. remains confident it can offset a substantial part of the synergy loss through cost cutting and redundancy elimination measures. We assume \$100 Mn of savings in our base valuation.

We further highlight the following points:

- We contrast Renew's cost relative to NYLD's, particularly on an SG&A/kW basis which is almost tenfold for Renew at ~\$29/kW vs. \$3.4/kW for NYLD. We suspect the discrepancy is likely due to the at-cost services agreement between NRG and the yieldco, as well as the more expensive Ivanpah. Further development opportunities remain also exclusively within the purview of NRG the parent sponsor; while the bulk of development costs are reflected in a separate 'development line item, there are still costs allocated to Renew for this purchase. While we don't exclude some cost re-allocation in the future, we doubt it would be implemented given

the valuation arbitrage at NYLD. Regardless, the size of Renew (\$60 Mn SG&A for ~\$200 Mn total cost) somewhat limits the scale of any potential savings. In any event, we emphasize the main question remains how NYLD fits into NRG's overall strategy; we note mgmt. continually stresses the importance of a strong and growing renewable pipeline, with NYLD as its centerpiece as a platform to monetize assets and capitalize on the fundamentals of the industry.

- How much savings can be achieved at the Retail segment remains the main unknown (\$800+ Mn of total costs in 2016, and ~half of the company's consolidated SG&A). A future question as part of NRG's cost mgmt. reductions remains whether costs specific to the retail effort to focus more narrowly on just the incumbent portfolio rather than retaining low margin customers via costly customer acquisition and retention efforts merits the effort. A further question is to what extent the expensive marketing arrangement in place maintains the brand recognition necessary to ensure legacy customers remain. We see this as a secondary angle in the cost reduction exercise.

Figure 4: Cost Analysis

	Capacity Generation		2016A Costs (\$Mn)			\$/kW			\$/MWh	
	(MW)	(TWh, 2016)	Total O&M	SG&A	Total	O&M	SG&A	Total	O&M	SG&A
Consolidated NRG	49,850	105.9	2,566	1,101	3,667	\$23.1	\$22.1	\$45.2	\$20.4	\$10.4
NRG Corporate	114	0.0	-16	156	140					
Retail	0	0.0	341	497	838					
Renew	2,053	3.9	141	60	201	\$68.7	\$29.2	\$97.9	\$36.3	\$15.5
NYLD	4,692	11.2	239	16	255	\$50.9	\$3.4	\$54.3	\$21.4	\$1.4
GenOn	16,423	26.0	639	208	847	\$38.9	\$12.7	\$51.6	\$24.6	\$8.0
Core Generation	26,682	64.9	1,222	164	1,386	\$45.8	\$6.1	\$51.9	\$18.8	\$2.5
Gulf Coast	14,085	51.1	693			\$49.2			\$13.6	
East	9,562	9.5	515			\$53.8			\$54.4	
West	2,286	4.4	28			\$12.3			\$6.5	
Other and Eliminations	749		-14							

Notes:

Total O&M includes Other Cost of Ops which includes ARD exp., insurance, property and other taxes

NYLD capacity excludes Thermal (1,645 MW)

Gulf Coast, East and West capacity exclude GenOn

Assumes GenOn Total O&M costs are allocated 80/20 to Core Generation's East and West segments

Development expenses (\$90 Mn in 2016) are not included

Source: Company Filings, UBSe

How does it look vs. peers now?

We benchmark below NRG Core Generation and GenOn against the IPP peers, CPN and DYN. Overall, we are increasingly cautious on the potential for expectations to meet material cost cutting on the Core Generation side as we believe the \$8-9/MWh higher total cost vs. peers mostly stems from characteristics of the portfolio itself rather than inefficiencies. See our latest transcript on the subject as well with ex-GenOn CEO Ed Muller.

- Indeed, while NRG Core Generation O&M/kW is higher than its peers at ~\$46/kW vs.

~\$37/kW, we suspect this is explained by the fleet itself: DYN and particularly CPN have a greater concentration of CCGTs which are cheaper to operate, while NRG Core Generation's portfolio is mainly composed natural gas steam turbine, oil, and coal-fired power plants.

■... NRG Core Generation SG&A/kW is sensibly similar to peers at \$6.1/kW vs. \$5.9/kW average for CPN and DYN. We again highlight GenOn's seemingly inflated SG&A which stands at ~double that of NRG Core Generation and the IPP peers on a \$/kW basis. We suspect some of the difference could be explained by different cost allocation between O&M and SG&A at GenOn vs. Core Generation given the similar total expense levels.

■... NRG's maintenance CapEx seemed skewed towards GenOn in 2016, with more than 2/3 of the work performed at the sub. We note GenOn's maintenance CapEx is expected to decrease ~in half to \$109 Mn in 2017. Further, we highlight NRG's total maintenance CapEx (Core Generation plus GenOn) is substantially lower than its peers at ~\$7/kW vs. low teens.

Figure 5: IPP Cost Benchmarking Across the Various Line Items

	Core Generation	GenOn	CPN	DYN	Avg. CPN/DYN	Δ NRG
Operations						
Operating Capacity (MW)	26,682	16,423	25,908	25,314	25,611	
Total Generation (TWh)	64.9	26.0	105.5	101.1	103.3	
Average Capacity Factor (%)	28%	18%	46%	46%	46%	
Total O&M						
O&M (\$Mn)	1,222	639	977	940	959	
O&M / Capacity (\$/kW)	\$45.8	\$38.9	\$37.7	\$37.1	\$37.4	
O&M / Generation (\$/MWh)	\$18.8	\$24.6	\$9.3	\$9.3	\$9.3	
SG&A						
SG&A Expenses (\$Mn)	164	208	140	161	151	
SG&A / Capacity (\$/kW)	\$6.1	\$12.7	\$5.4	\$6.4	\$5.9	
SG&A / Generation (\$/MWh)	\$2.5	\$8.0	\$1.3	\$1.6	\$1.5	
Maintenance CapEx						
SG&A Expenses (\$Mn)	93	205	405	253	329	
SG&A / Capacity (\$/kW)	\$3.5	\$12.5	\$15.6	\$10.0	\$12.8	
SG&A / Generation (\$/MWh)	\$1.4	\$7.9	\$3.8	\$2.5	\$3.2	
Total Expenses						
Total Expenses (\$Mn)	1,479	1,052	1,522	1,354	1,438	
Total Exp / Capacity (\$/kW)	\$55.4	\$64.1	\$58.7	\$53.5	\$56.1	
Total Exp / Generation (\$/MWh)	\$22.8	\$40.5	\$14.4	\$13.4	\$13.9	

Notes:

CPN data is for the whole company (including retail segment)

DYN data excludes Engie assets

Source: Company Filings, UBSe

Comparing Fleets

We include below a fleet comparison by fuel and ISO and again highlight NRG Core

Generation's greater concentration of gas ST and oil-fired power plants vs. peers. We highlight the DYN data excludes the Engie assets; once included, the proportion of CCGTs in the portfolio will increase by ~10 points at the expense of coal, while the exposure to ERCOT will rise from 0% to 15%, at the expense of CAISO and MISO.

Figure 6: Fleet Comparison

Fleet Comparison - By Fuel Type				
% of Operating Capacity	Core Generation	Gen On	CPN	DYN
Gas CCGT	12%	13%	85%	3
Gas CT	9%	6%	8%	1
Gas ST	26%	41%	3%	
Oil	14%	15%	1%	
Coal	33%	25%	0%	4
Nuclear	4%	0%	0%	
Other	0%	0%	3%	
Total	100%	100%	100%	10

Fleet Comparison - By ISO				
% of Operating Capacity	Core Generation	Gen On	CPN	DYN
PJM	20%	59%	19%	4
MISO	13%	5%	3%	2
ISO-NE	6%	7%	8%	1
NYISO	13%	7%	1%	
CAISO	9%	23%	22%	1
ERCOT	39%	0%	36%	
Other	0%	0%	10%	
Total	100%	100%	100%	10

Note: For cost comparison purposes, DYN data excludes the Engie assets

Source: Company Filings, SNL Financial

NRG Energy Inc.

UBS Research

PIVOTAL QUESTIONS

Q: Is the GenOn settlement a good outcome for NRG?

UBS VIEW

return 

We believe the \$150 Mn net cash contribution (\$261 Mn contribution plus ~\$13 Mn pension contribution in 2017, partially offset by the return of \$125 Mn on the revolver) and the assumption of ~\$120 Mn of pension liability as part of the settlement with noteholders is a positive for NRG as that amount is lower than many investors feared given the tangible threats of substantial litigation, notably related to the Shared Services Agreement (see our related note [here](#)) and previous asset transfers. The main question remains the extent to which the company can cope with losing the Shared Services Agreement. While the company remains confident it can offset a significant portion of the loss, it remains unclear how much of these savings would be specific to GenOn or as part of the broader cost evaluation with the BRC (Business Review Committee). Finally, the entitlement to a "worthless stock deduction for federal income tax purposes" would result in NOLs (magnitude TBD), which could provide some upside.

EVIDENCE

The \$150 Mn net cash contribution and ~\$120 Mn of pension liability assumption is substantially lower than the \$729 Mn litigation filed by the GenOn noteholders. In addition, separating from GenOn would avoid ~\$300 Mn/year avg. negative FCF generation under the current structure according to our forecast. Finally, losing the GenOn portfolio would increase NRG's relative exposure to premium-priced ComEd to 84% of PJM capacity, while overall portfolio exposure to ERCOT (the power market on which we are the most constructive – see our ERCOT CDR note [here](#)) from 24% to 39%.

WHAT'S PRICED IN?

NRG's stock price increased by ~\$0.50/Sh since the first GenOn settlement 8K was released on May 23. While the timeline coincides with the results of the PJM auction, making it challenging to isolate the true impact, we believe the market took the announcement positively. The key question remains how much dis-synergy offset does the street believe the company can achieve.

GenOn Projections

We include below our GenOn EBITDA projections. We highlight the degrading profitability profile in the later years, particularly in PJM given the sharp decline in capacity payments, notably in MAAC and PEPCO where the majority of GenOn's fleet is located.

Figure 7: GenOn EBITDA Projections

Gen On EBITDA, by Segment (\$Mn)	2016A	2017E	2018E	2019E	2020E
Eastern PJM	209	70	44	(3)	(55)
Western PJM/MISO	274	(23)	53	2	(30)
California	27	27	27	27	27
Other (New England, NY etc.)	39	69	103	61	36
Energy Marketing/Gas Contracts	2	2	2	2	2
Adj. EBITDA	551	144	228	89	(20)
Adjusted EBITDA Guidance		145			
Plus: Operating Lease Expense	112	112	112	112	112
Adj. EBITDAR	663	256	340	201	92
2016E Net Debt / Adj. EBITDA	2.7x	10.3x	6.5x	16.8x	-74.3x
2016E Net Debt Incl. Leases / Adj. EBITDAR	3.8x	9.8x	7.4x	12.5x	27.4x

Source: Company Filings, UBSe

We also include below our GenOn FCF projections and emphasize the current structure would result in ~\$300 Mn negative FCF generation per year on average.

Figure 8: GenOn FCF Projections

Gen On Free Cash Flow Walk	2017E	2018E	2019E	2020E
Beginning Cash Balance	1,034	738	602	326
Adjusted EBITDA	144	228	89	(20)
Less: Interest Expense	(235)	(235)	(235)	(235)
Less: Other Adjustments	(126)	(50)	(50)	(50)
Less: Total Capex	(79)	(79)	(79)	(79)
Free Cash Flow	(296)	(136)	(276)	(384)
Ending Cash Balance	738	602	326	(58)
FCF Guidance	(300)			

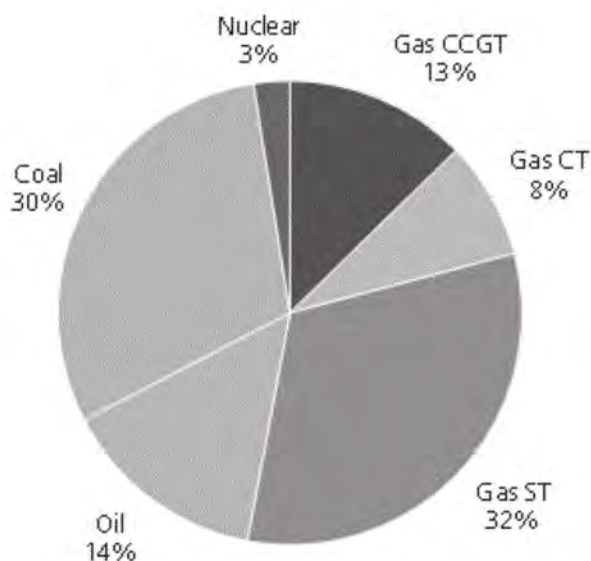
Source: Company Filings, UBSe

What does NRG look like without GenOn?

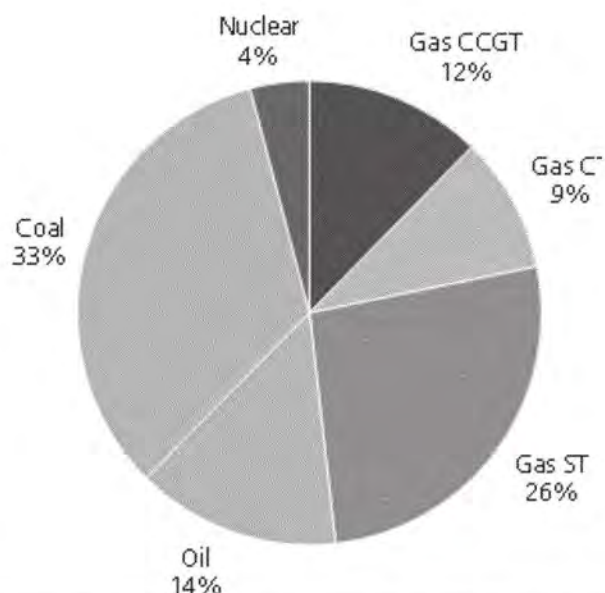
By fuel type: We note the portfolio composition by fuel wouldn't necessarily change much:

Figure 9: Total Capacity by Fuel – With GenOn scenario

Figure 10: Total Capacity by Fuel – Without GenOn scenario



Source: Company Filings, SNL Financial, UBS

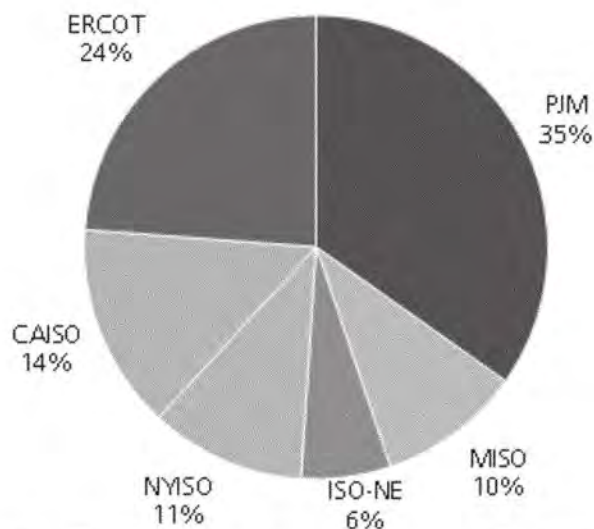


Source: Company Filings, SNL Financial, UBS

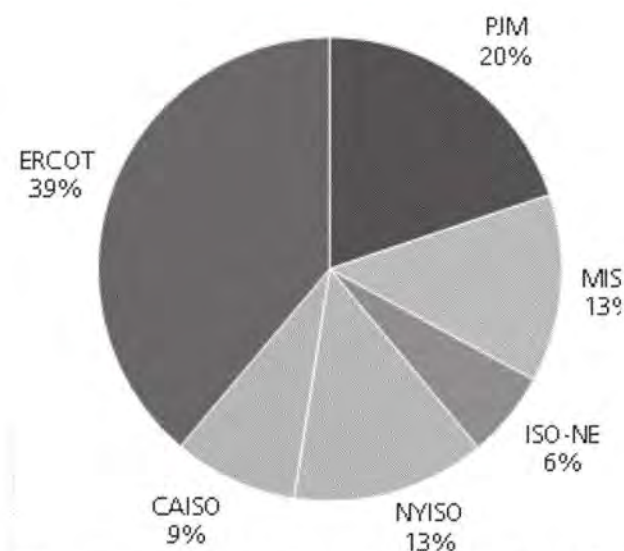
By ISO: Without GenOn, NRG's exposure to PJM would decrease significantly from ~35% to ~20%, while the portfolio would become more concentrated in ERCOT, with the TX market accounting for ~39% of capacity vs. ~24% currently.

Figure 11: Total Capacity by ISO – With GenOn scenario

Figure 12: Total Capacity by ISO – Without GenOn scenario



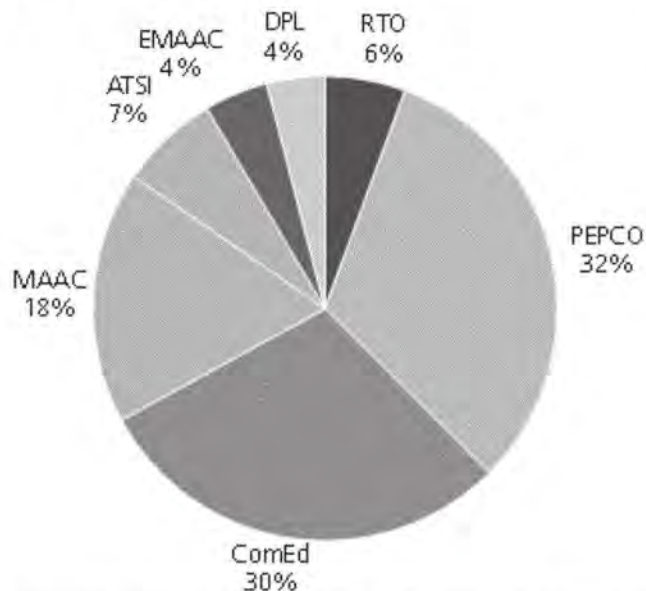
Source: Company Filings, SNL Financial, UBS



Source: Company Filings, SNL Financial, UBS

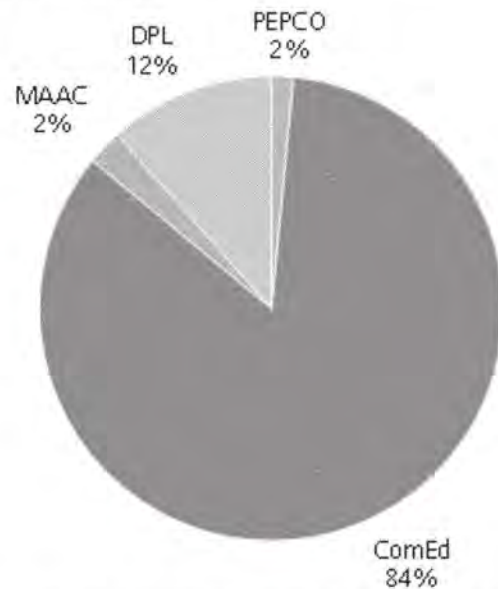
Within PJM: The remaining NRG (ex-GenOn) would then largely become a ComEd play with ~84% of total capacity in this zone vs. only ~30% currently.

Figure 13: PJM Capacity by Zone – With GenOn scenario



Source: Company Filings, SNL Financial, UBS

Figure 14: PJM Capacity by Zone – Without GenOn scenario



Source: Company Filings, SNL Financial, UBS

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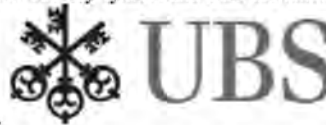
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From: IDERA
Sent: Thur 6/8/2017 2:15:02 PM
Subject: 10 Lesser-known Capabilities of SQL Diagnostic Manager

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10 Lesser-known Capabilities of SQL Diagnostic Manager - Did you know that you can easily measure tempdb contention with SQL Diagnostic Manager? Or that you can easily integrate SQL Diagnostic Manager with Microsoft SCOM?

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- Capture deadlocks
- Create actionable responses
- Monitor query waits... ***and more!***

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From: pinkelephant=pinkelephant.com@sa2.scsend.com
Sent: Thur 6/15/2017 8:00:00 PM
Subject: [SPAM] PinkCONNECT - FREE Online IT Conference, June 28

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www.pinkelephant.com

<http://www1.pinkelephant.com/newsblast/Jenifer/06-15-17/default.html>

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Government Executive
Sent: Thur 6/8/2017 5:00:46 PM
Subject: Benefits Cuts and the President's Budget

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From: Solar Electric Worldwide
Sent: Thur 6/15/2017 7:59:01 PM
Subject: [SPAM] Choose From 11 Solar Panels at 28¢/Watt

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Solar News from PV Magazine

**Sunnova snags \$1 billion
investment in first three
months of 2017**

Sunnova Energy announced today it has raised another \$140 million from CIT Group and other investors to fund solar projects, bringing the total raised in the last three months to nearly \$1 billion.

[Read More](#)

**Deloitte says millennials are
driving solar expansion**

According to Deloitte's annual "Resources

2017 Study – Energy Management: Sustainability & Progress,” grid parity, driven by technological advances and plunging prices, has allowed consumers and businesses to choose clean energy over more traditional fossil-fuel options, with increasing solar use being most consumers' top priority [Read More](#)

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This is boring and won't turn you on:

The Untapped Potential of Energy Efficiency

The safest and the cleanest power plant is the one you don't have to build.

What is the world's single most important fuel? (Hint: it is also the energy resource that all countries have in abundance.) The answer to this riddle is energy efficiency, which is sometimes referred to as the "hidden fuel." That is the powerful message of the Energy Efficiency Market Report 2016, published by the International Energy Agency.

A strong energy efficiency policy is vital to achieving the central policy goals of improving energy security and reducing CO2 emissions as well as air pollution in the most cost-effective way.

More and more countries are discovering that the safest and the cleanest power plant is the one you don't have to build thanks to higher energy efficiency.

Related Research on ASDReports.com:

Global Module Level Power Electronics (MLPE) Market, Forecast to 2021

Whereas energy policy has traditionally been dominated by a supply-side bias (i.e.: how do we produce more oil, gas, electricity?), policy makers increasingly understand that we need to focus much more on the demand side of the equation (i.e.: how do we consume less energy?)

Over the last 15 years, for example, vehicle use has increased substantially because of

economic and population growth. Had efficiency levels not improved, energy demand in IEA countries would have been 12% higher in 2015 than it actually was. In China, the annual savings from higher energy efficiency now equal its renewable supply.

One reason demand-side policy is so underrated is because energy efficiency is not very sexy. It lacks wonderful ribbon-cutting photo-ops for politicians, and it often can mean higher upfront costs that may put off consumers, even if that leads to long-term savings. And yet the important efficiency gains that we have experienced in the last decades have been driven by stronger policies.

Today, a third of the world's energy consumption is covered by mandatory standards and regulations, compared with just 11% in 2000. Significant progress has been made in the areas of lighting, cars, and space heating, and to a lesser extent, appliances. But there still remains a big potential for improvement since 70% of global energy consumption is not subject to mandatory efficiency standards.

Trucks and electric motors are two key areas where a lot more can be done. Electric motor systems account for more than half of today's electricity consumption in a range of end-use applications, such as fans, compressors, pumps, vehicles, and refrigerators. In space cooling, 58% of energy consumption has no minimum efficiency standards. Applying average stringency standards would reduce energy needs by 30%.

Mandatory standards are a critical policy instrument to maintain the long-term drive to improve energy efficiency, particularly at a time of lower energy prices that generally dampen the enthusiasm for chasing energy savings. In terms of countries and regions, China and the United States are global leaders, followed by Japan and the European Union.

India, Brazil and Middle Eastern countries have made significant progress since 2000, but are still lagging. The share of Middle Eastern energy consumption covered by mandatory efficiency standards is 15% in 2015, just half the global average. For Middle Eastern oil and gas producing countries, improving energy efficiency would also help expanding their export potential since it would reduce domestic consumption.

Source : International Energy Agency

Not very funny or sexy but interesting, philosophical in a way, I believe. As far as we've come in PV we're forgetting more than ever more about energy conservation and efficiency.

Solar's just too hot right now.

With progress comes waste, I guess. Have you noticed how fast our kitchen trash cans fill up every day. And, all the, non-degradable for hundreds of years, plastic and glass, and oh my God (OMG) the massive amount of perfectly good food and excess crap we buy and bring home from stores only to realize we don't have enough room to store it in. - John Kimball

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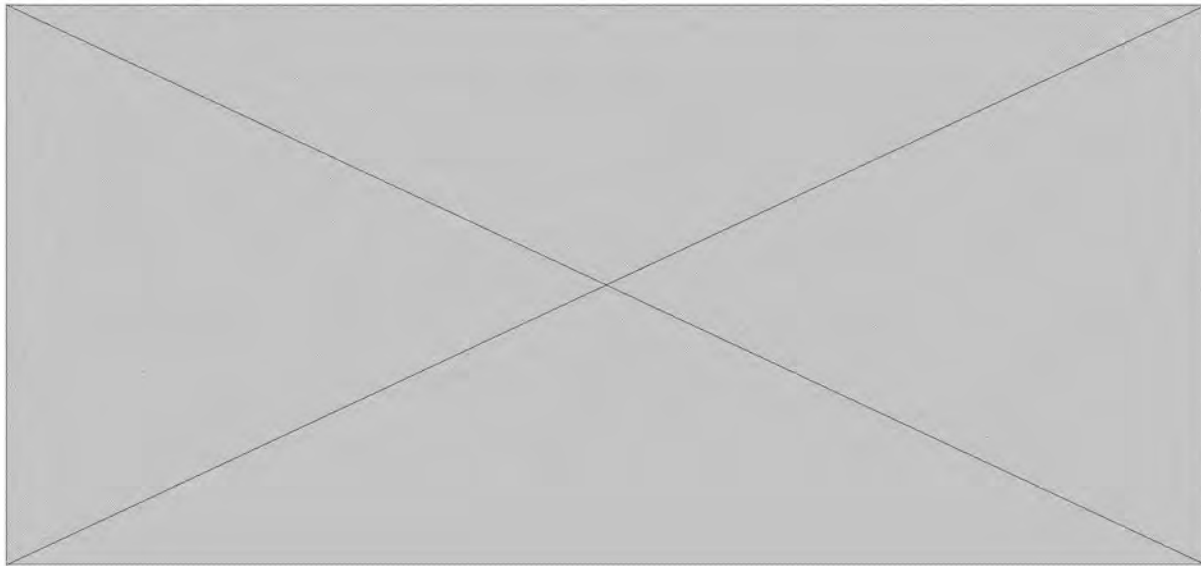
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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Iain Kennedy
Sent: Tue 6/6/2017 6:48:31 PM
Subject: "The Journey to Predictive Analytics" - Sr Director at GAP



Hi Mike,

This week, we have the pleasure of bringing you People Analytics insights from Faranak Raissi, Senior Director, Integrated Talent Management at **Gap**, who will be speaking at **HR & Workforce Analytics Summit** taking place in **San Francisco on June 19 & 20**.

Who is our expert?

With nearly 16 years experience in Human Resources, Faranak has worked in organizations such as **Activision, Medtronic, CareFusion, Cardinal Health**.

What's her expertise?

- Talent acquisition, total rewards, compensation, technology and analytics
- Technical skills, onboarding and high-potential development
- Transformation for organizational design and change management

Read her interview: "*We Can Get Data/Metrics On Employees With Wearables But There Would Certainly Be Data Privacy/HIPPA Considerations*".

Join Faranak and **20 other experts** and learn how to improve organizational development and effectiveness by providing the right advice and guidance.

Iain Kennedy
Global Events Manager

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Records Management Training Workshop June 20 2017
Sent: Thur 6/8/2017 2:33:43 PM
Subject: [SPAM] Early Bird Ends June 10th - Meeting the Gov Records Mgmt Mandates

Records Management in Government Training Workshop XIV

*Agency Self Assessments are in to NARA
- How Can You Improve Your Scores?*

Managing Government Records Directive Updates:

**What Agencies Need to Do for 2017 and Beyond
Lessons Learned and Best Practices**

**June 20, 2017
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Keynote Speakers:

**Don Rosen
Director of Records Management Oversight and Reporting
National Archives and Records Administration (NARA)
and
Arian Ravanbakhsh**

Manager, Policy and Program Support Team
National Archives and Records Administration (NARA)

Additional Government Speakers

Matthew Olsen

Acting Chief Privacy and Data Sharing Officer

Acting Executive Director

Office of Privacy & Information Management (PIM)

U.S. Department of Health and Human Services

Mark Patrick

Chief, Information Management Division

The Joint Staff Secretariat

Department of Defense

Additional Government Speakers to be Announced Soon

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Goals of this workshop are:

- **Focus on email retention regulation and policy and email best practices**
- **Provide attendees with a clear idea of the changes envisioned in the Directive,**
- **Strategies to obtain funding for solutions**
- **Help understand the role of the Senior Agency Official (SAO) in setting agency priorities and achieving program success**
- **Describe the developing roadmap that will lead to realizing these changes, and**
- **Describe the steps individual records managers can do now to align their work with the records management future the Directive envisions.**
- **Specific Agency Actions to be Completed in response to the Directive by 2019**
- **Establishing a community of interest for Records Management**
- **Current email policy and regulations**
- **Tips for planning for the Directive's 2019 Deadline**

Overview:

With the recent headlines regarding government email retention and e-discovery, it is important to understand how the NARA/OMB regulations and deadlines will impact your agency. This one-day Potomac Forum Workshop will focus on the activities mandated by the NARA/OMB Records Management Directive. Key executives from NARA and government agencies will discuss the directive and its implementation. Detailed review and analysis of the directive will be presented to help agencies better understand what they need to do, how to do it, and how to get the funding necessary to be successful. The recent Agency Submissions to NARA are discussed along with scores and suggestions for improving Agency Scores.

What You Will Learn:

- What happens now that the 2016 deadline has passed
- What needs to be done to comply with the provisions of OMB M-12-18
- How the relationship between NARA and Federal agencies have and will change
- How the role of technology will evolve in the achievement of OMB M-12-18's goals
- What this initiative will mean for Federal records management in the short and long term
- What the components of a sustainable Records Management program will be in this new environment
- A better idea of the commitment of time and resources needed to comply with the Directive
- How the Senior Agency Officials can and are making a difference in improving the management of government records
- NARA Requirements for managing email - lessons learned from recent IRS news event - Complying with the Law - the Federal Records Act and what it means for email and other records losses
- The November 2014 Records Management Legislation and what it means to Agencies and Records Managers
- and more...

Why You Should Attend:

- To gain a clear understanding of OMB M-12-18
- To assist you in getting the best start on the many changes OMB M-12-18 will bring to your agency
- To learn key funding strategies to help your agency implement solutions to meet its objectives
- Hear from other government officials about the practical aspects of complying with the Directive
- Ensure success of your Records Management Program as you implement the Directive
- Lessons Learned since the publication of the Directive
- Understand the NARA requirements for email management - avoiding embarrassing non-conformance
- Understand email retention regulation, policy, and legislation.

Who Should Attend:

- CIO's and the Staff including technical staff involved with Records Management
- Senior Agency Officials (SAO's) charged with responsibility for the

implementation of solutions for their agency

- IGs and Staff
- Government Records Managers
- All those with responsibility for initiating and carrying out the reforms mentioned in the President's Records Management Directive
- Professionals responsible for managing information resources on an enterprise-wide basis
- Those needing to understand latest NARA policy and guidance
- Contracting, Procurement and Acquisition Management Professionals
- Program Managers Who Must Understand Records Management in Government
- Government executives who want to understand email retention and records management regulation, policy, and legislation.
- Industry Partners

Format:

This workshop will combine keynote presentations by NARA, lectures on implementing the Directive, real world examples and discussions to provide a thorough, enjoyable day of learning.

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taken back and applied to my office.
Records Management Specialist
Civilian Department*

*Excellent - I got a number of good ideas and suggestions.
Well worth the investment.
Regulation Council
Civilian Administration*

*One of the best trainings I have been to.
Records Manager
Navy Center*

*Very well done
Deputy Commissioner for Legislative and Congressional Affairs
Civilian Agency*

*The overall workshop was great. I learned a lot of valuable information on to help me
in my current position and provide additional guidance for my organization
Records Management Officer and Team Lead
DOT Agency*

*... for anyone who needs to follow the directive for records management
Admin Specialist
Civilian Commission*

*Outstanding!
Management and Program Analyst
DOT Agency*

*Very Well organized. Job well done!
DoD IG Specialist*

*Great!
Assistant Records Manager
Small Agency Commission*

Workshop for Government and Industry Partners

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400 North Washington Street , Alexandria , Virginia, 22314 , USA

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Iain Kennedy
Sent: Thur 6/15/2017 6:54:37 PM
Subject: Re: Learn Workforce Analytics From Facebook, NASA, Airbnb & more

Hi Mike,

I just would like to follow up on my message below as the [HR & Workforce Analytics Summit San Francisco](#) will be taking place next week on **June 19 & 20**.

David Gainsboro, People Data Analyst at Dropbox sat down with us just before the event! Read his full interview: "[Does A Data-Driven Culture Needs To Be Implemented From The Top Down](#)".

Join David and **20 more Workforce Analytics experts** at the event - [book one of the last passes now!](#)

Please contact me directly for more information on the summit.

Kind regards,

Iain Kennedy
Global Events Manager
Innovation Enterprise
+1 415 610 5595

From: <ikennedy@theiegroupp.com>
To: flynn.mike@epa.gov
Date: Tuesday, June 13, 2017
Subject: Learn Workforce Analytics From Facebook, NASA, Airbnb & more



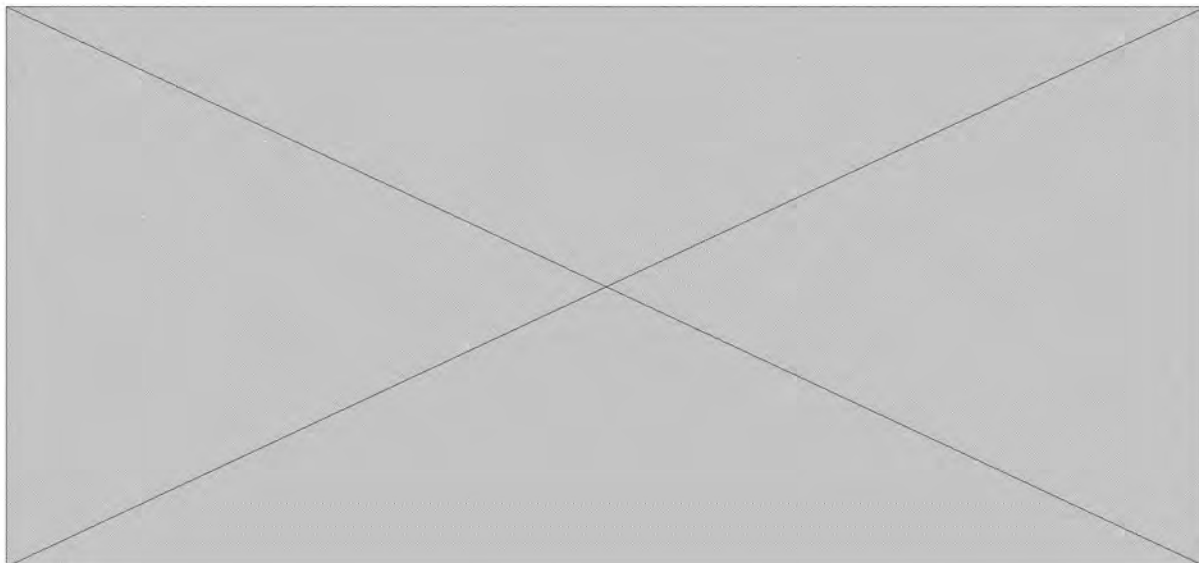
Hi Mike,

The [HR & Workforce Analytics Summit](#) is almost sold out and with only a few days to go, this is your last chance to join **100+ senior people analytics** executives in attendance.

On **June 19 & 20**, you could meet and learn from leaders at **Facebook, NASA, Chevron, GAP, Dropbox, Western Michigan University, Aon, Tesoro, Aurora Health Care, Salesforce, Pfizer, Airbnb, Virgin Pulse, Wyndham, Nestlé Waters**, and many others.

Don't miss out and register now with passes starting at just \$600!

Iain Kennedy
Global Events Manager
Innovation Enterprise



Hi Mike,

The **HR & Workforce Analytics Summit** is almost sold out and with only a few days to go, this is your last chance to join **100+ senior people analytics** executives in attendance.

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Don't miss out and register now with passes starting at just \$600!

Iain Kennedy
Global Events Manager
Innovation Enterprise
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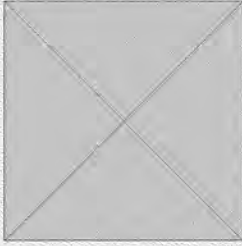
To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Briauna Fisher
Sent: Thur 6/8/2017 1:25:43 PM
Subject: Need help making PPM more effective?

**Looking
to
make
your
PPM
process
more
effective?**



**Our
consulti
and
technica
expertis
is there
for
every
step of
your
PPM
journey.**

Do you spend more time worrying about your PPM platform than actually managing enterprise investments? Perhaps we can help put your mind at ease. Our collaborative team of business and technology experts offers a wide array of consulting services to help you transform & operationalize your PPM capabilities, so you can focus on actually managing your enterprise portfolio.



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We're not just another consultant - we offer both strong portfolio management best practices and technical expertise to help ensure your PPM platform and processes are state-of-the-art.

We've distilled our experience working with hundreds of customers into a unique approach that delivers transformational and operational services – all backed up by unrivaled technical expertise – that supports your organization at every step of its PPM journey.

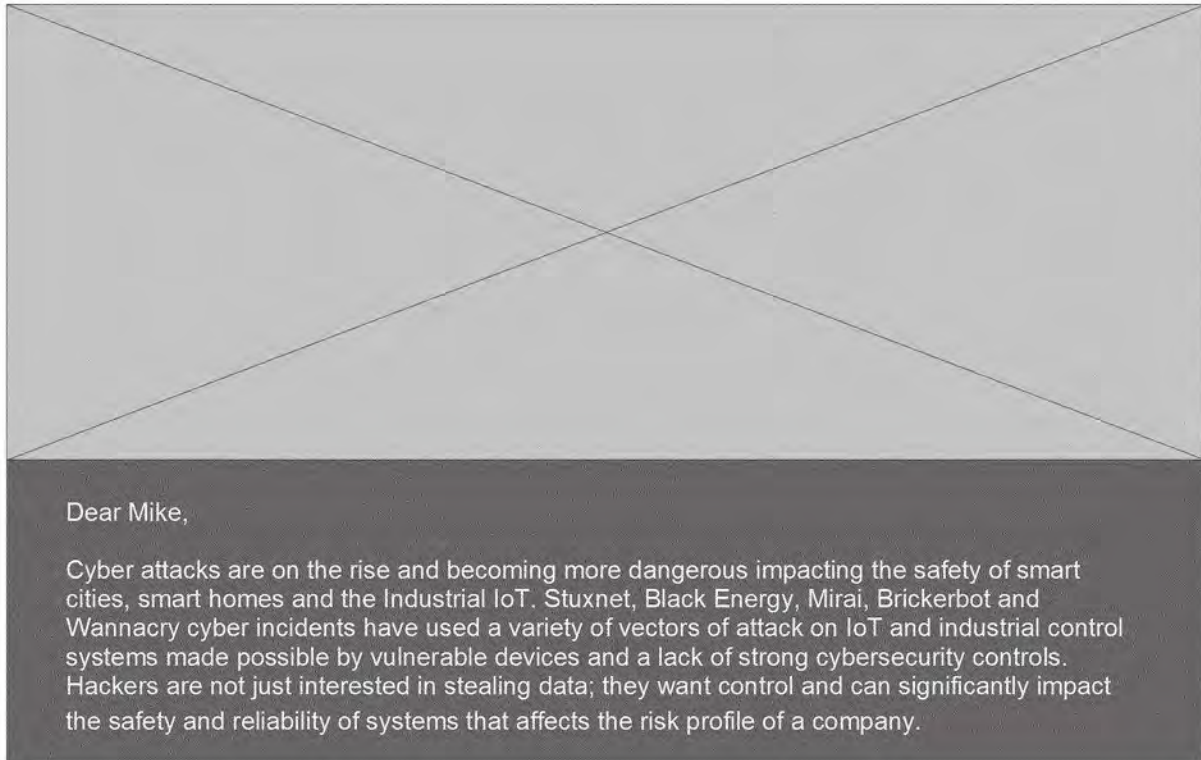


Sound like something you'd like to learn more about? Download our [consulting guide](#) now, then let's talk about where you'd like to take your PPM process and [how we can help you get there.](#)

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Mocana
Sent: Thur 6/15/2017 5:46:38 PM
Subject: [SPAM] Mocana Webinar: Defending IoT Devices Against Ransomware, Viruses & Worms



Join this webinar to learn about the:

- Detail of the systems and software that were compromised in recent cyber attacks
- Common vectors of cyber attack on IoT and industrial control systems
- How to defend against cyber attacks by leveraging embedded security controls in IoT and ICS devices
- How create a chain of trust workflow to harden devices and ensure secure communications.

About the presenter:

Dean Weber, CTO of Mocana, is an expert in cybersecurity for embedded systems, IoT and industrial control systems. With more than 30 years of experience in security, cybersecurity and information systems, Dean is a trusted advisor to CISOs at Fortune 1000 companies. Prior to Mocana, he was the director and CTO at CSC Global CyberSecurity. Prior he was the CTO of Applied Identity, which was acquired by Citrix. He also spent several years in the U.S. Navy working in physical and electronic security.

[CLICK HERE TO ATTEND](#)

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Sincerely,
Mocana

If you'd like to learn more about Mocana and how our IoT security platform can protect your device network, contact us and we'll get back to you promptly.

Mocana Corporation | 20 California Street, 4th floor San Francisco, CA 94111

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Patrick McLaughlin
Sent: Tue 6/6/2017 5:36:27 PM
Subject: New Book: Regulation & Economic Growth

The Mercatus Center at George Mason University works to bridge the gap between academic ideas and real world problems.

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Book Release

Regulation and Economic Growth: *Applying Economic Theory to Public Policy*

"The regulatory closet will always need some essential items to protect citizens and maintain a fair marketplace," writes James Broughel in *InsideSources*. "But at some point, as we add more and more rules without ever cleaning out the old ones, even necessary rules just add to the mess and create confusion, becoming less effective than they should be."

Broughel's latest book, *Regulation and Economic Growth: Applying Economic Theory to Public Policy*, releases at a crucial moment as the nation becomes increasingly concerned about economic growth, and federal and state legislators cast their eyes toward regulatory reform.

To learn more about the book and its relevance to current policy debates, read James Broughel's latest post

at [SmartRegs](#).



[Learn More](#)

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Granicus
Sent: Thur 6/15/2017 5:16:58 PM
Subject: Digital Strategy Awards Nominations Now Open



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2017 Granicus Digital Strategy Awards

**You are responsible for important work that affects citizens' lives.
And you gladly do it, sometimes without much recognition or
praise.**

**But now is the time to shine a light on the inspiring work you and
your team do every day!**

**Submit a nomination for the 2017 Granicus Digital Strategy Awards in one
(or more!) of the following categories:**

- Digital Achievement Award
- Communicator of the Year
- Modern Government Leadership Award
- Creative Use of Digital Citizen Engagement
- Environmental Stewardship Award
- Transformed Access to Services
- Enhanced Public Awareness

**For more details on the nomination and judging process, visit
<https://granicus.com/awards>. We look forward to receiving your
nominations by July 31.**

Granicus
408 St. Peter Street, Suite 600, St. Paul, MN 55102 | [Legal & Privacy](#)
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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Ecompex
Sent: Thur 6/15/2017 2:42:29 PM
Subject: 5 Questions to Ask Before Starting Any Digitization Project

Ecompex, Inc. Monthly Newsletter - June 2017

No Images? [Click here](#)

5 Questions to Ask Before Starting any Digitization Project

Flynn,, as the world becomes more and more digital, companies and government agencies are increasingly looking towards digitization projects to convert old paper documents into electronic assets that can be integrated with their current information. So this month, we would like to share with you the 5 most important questions to ask yourself before starting any digitization project. Lets dive in!

Ecompex Achieves CMMI Level 2 Certification

Ecompex, Inc.'s Software Development Devision has been appraised at Level 2 of the CMMI Institute's Capability Maturity Model Integration (CMMI)®. The appraisal was performed by SPA Enterprise Services.

Employee Spotlight

Tsehay Yalew

Operator Clerk - Reston, VA

Tsehay is a recent new hire at our Reston office and she has already shown and attention to detail and excellent work eithic and has become an important member of our document coding team.

Around the Industry

The Weak Link in Your Supply Chain - Information Logistics

The Digital Landfill - The term "Logistics" conjures up images of complicated supply chains, and the Rube Goldberg-esque complexities of summarizing, rationalizing, and reporting on them in an intelligent way. As bad as this is on the physical side of the business, most likely the information flows associated with these physical flows look even worse.

Why You Should Let Artificial Intelligence Creep Into Your Business

Inc. - Unlike traditional computing, which delivers precise solutions within defined parameters, A.I.--sometimes referred to as cognitive computing--teaches itself how to solve problems.

3 Cool AI Projects

Information Week - AI is all around us, quietly working in the background or interacting with us via a number of different devices. Various industries are using AI for specific reasons such as ensuring that flights arrive on time or irrigating fields better and more economically.

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Madalynn Lauria
Sent: Thur 6/15/2017 1:54:40 PM
Subject: LAST CHANCE: Complimentary Lunch Seminar on Securing and Managing Privileged and Administrative Passwords



Complimentary Lunch Seminar

Securing and Managing Privileged
and Administrative Passwords



Wednesday, June 21, 2017
11:30am - 1:00pm
Mastro's Steakhouse
Washington , DC

Mike

Privileged accounts have been leveraged in every recent breach and are an area of focus of a number of Federal mandates and guidelines such as the DHS CDM Program, the 30 Day Sprint, NIST 800 53 rev 4, FISMA, and HSPD-12. CyberArk is hosting a seminar focused on mitigating risk while meeting these requirements on Wednesday, June 21, 2017 in Washington , DC. We will be discussing best practices for a successful privileged account security program, and how we have been assisting many Federal agencies over the past years.

You will learn how CyberArk can help you:

- Support DHS CDM Goals around Privileged Account Management
- Enable Multi-Factor Authentication on all account types (including shared privileged accounts, legacy systems, etc.)
- Automate recommended security controls for NIST 800 53 rec. and FISMA
- Mitigate the risk of insider threats, lateral movement, and the pass-the-hash attacks
- Protect domain controllers from Kerberos and Golden Ticket attacks

In addition, you will have the opportunity to shape the discussion by sharing ideas and posing questions. We look forward to your attendance and an interactive discussion about Privileged Account Security.

Regards,
Madalynn Lauria
617.630.6550
CyberArk
60 Wells Ave | Newton, MA 02459

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Briauna Fisher
Sent: Thur 6/15/2017 1:25:59 PM
Subject: Benefits realization is key to demonstrating PMO value

Discover the benefits of Benefits Realization

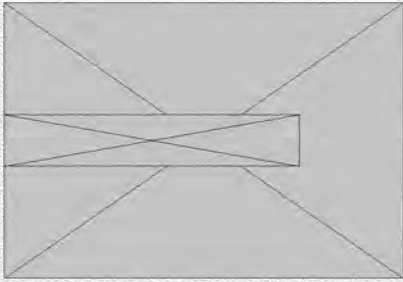


Video
unveils
a more
effective
way for
your
PMO to
demonstr
value.



Delivering projects on time is nice. But the truly strategic PMO must do more than simply execute projects. In this video, you'll learn how powerful benefits realization capabilities can help you identify, track and measure the actual benefits associated with each project. Discover how a robust benefits realization framework can help your PMO objectively measure the benefits delivered against each project's original business case, delivering the insight needed to more effectively demonstrate your PMO's value to the entire organization.

Track benefits and measure



results.

Watch this quick video to see how you can:

- **Improve estimating accuracy**
- **Track actual benefits**
- **Generate powerful reports and dashboards**

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Troux by Planview
Sent: Thur 6/15/2017 1:17:47 PM
Subject: [SPAM] Just Released - Independent Enterprise Architecture Management Suites Evaluation

Get the first look

The Forrester Wave™: Enterprise Architecture Management Suites, Q2 2017



Mike

The Forrester Wave™: Enterprise Architecture Management Suites, Q2 2017 is out and we are excited to announce that Planview has been cited as a Leader for our enterprise architecture product, Troux. Planview earned the highest scores possible for product vision, delivery model, market approach, and planned enhancements.

Forrester's market evaluation goes on to cover:

- The Scope and Interactions for EAs - The underlying shifts and trends
- Changing game for EA Solutions - Current needs for EAs
- How to choose the right vendor - EA scope and business needs
- EAMS Evaluation - Strengths and weaknesses of 10 vendors

Learn more about Enterprise Architecture Management Suites for your organization by downloading the report now.

[Download the Wave now >>](#)

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Trustwave Government Solutions
Sent: Thur 6/15/2017 1:12:15 PM
Subject: Product Engineering has released Analytics 7.5!

Product Engineering has released Analytics 7.5!

The Analytics update has been uploaded to the Trustwave Government Support Portal at:
<https://trustwavegovt.force.com/support/login>

[Login | TGS Support](#)

trustwavegovt.force.com

TGS Support Customer Secure Login Page. Login to your TGS Support Customer Account.



Trustwave Government Solutions | 1800 Alexander Bell Dr., P-100, Reston, VA 20191

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: InfoArmor
Sent: Thur 6/15/2017 12:09:46 PM
Subject: How to Protect Your Employee's Credentials

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Cyber Security Executive Order Implementation
Sent: Thur 6/15/2017 12:09:40 PM
Subject: [SPAM] Register for July 12: The President's Cybersecurity Exec Order (EO) Workshop

**Please Review and Forward to
Your Government Executives, Managers and Staff
Who Play a Part in Agency Cyber Security Management or Implementation**

Potomac Forum Training Workshop
**Implementing the President's
Cybersecurity Executive Order (EO)
Training Workshop**

*A "How To" Workshop to Implement the
Requirements of the EO and its Reporting Requirements*

Date: Wednesday, July 12, 2017

Early Bird Reduced Registration Fee Until June 17th

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(703) 683-1613
info@PotomacForum.org

**Location of Workshop:
Willard InterContinental Hotel
Washington, D.C.**

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and NOT Sales or Marketing Events**

**Workshop for Government & Industry Partners
Press is Not Permitted to Encourage
Candid Discussion in our Learning Environment**

Additional Government Speakers are being
approved for participation by their Agencies.

Government Speakers:

Dr. Ron Ross

NIST Fellow

**Author of the NIST Risk Management Framework (RMF) and
Numerous NIST Cyber Security Publications**

Jarvis Rodgers

Information Technology Audit Director

Office of Inspector General

Department of Health and Human Services (HHS)

Additional Government Speakers are being
approved for participation by their Agencies

Potomac Forum Workshops are 100% educational programs and not
sales or marketing events!

Overview:

This workshop will focus on the President's EO on Cybersecurity and discuss its requirements. A key requirement is the implementation of NIST's Cybersecurity Framework (CSF). We will present an understanding of the CSF and NIST's Risk Management Framework (RMF) which is a key component of the CSF. The CSF and RMF are critical for the federal government in its efforts to mitigate risk within enterprise information systems. The workshop will provide detailed guidance on the integration of the CSF and RMF into a holistic Cybersecurity solution. In addition, the workshop will address the EO reporting requirements for the first 90-day report and the other reports identified in the EO.

Hear from industry experts and government officials tasked with implementing robust cybersecurity and risk management strategies along with learning how NIST's CSF and RMF can be effectively implemented to reduce the risk of cyber-attacks. Listen to a government panel of CIOs and CISOs to understand the challenges they are facing on a day-to-day basis and how implementation of NIST's CSF and RMF helps them identify the risks and what it takes to mitigate those risks. Gaining insights from the

panel and peer interactions at the workshop should be invaluable in implementing the President's EO and moving the needle forward in improving federal cybersecurity.

What You Will Learn:

- **The approach used by the NIST RMF**
- **The value of the integration of the NIST RMF with the NIST CSF**
- **Development of agency Risk Management Strategies**
- **Changes in federal information system authorization requirements and guidelines**
- **Guidance into what agencies can expect from the NIST RMF and new CSF processes**
- **Importance of Risk Assessments (RA), Security Control Assessments (SCA), and Security Testing & Evaluation (ST&E)**
- **Security control categorization and how it is used to manage risk**
- **NIST SP 800-53A, Guide for Assessing the Security Controls in Federal Information Systems and Organizations: Building Effective Security Assessment Plans; NIST SP 800-37 Rev. 1 Guide for Applying the Risk Management Framework to Federal Information Systems: A Security Life Cycle Approach and NIST SP 800-39 Managing Information Security Risk**
- **Reporting Requirements for the Executive Order**
- **Best Practices for Responding to the Executive Order**

Why You Should Attend

- **Review the key steps within the NIST RMF and CSF**
- **Obtain practical knowledge of how NIST RMF and CSF are incorporated into information system security**
- **Gain insight into conducting and implementing NIST RMF and CSF in your organization**
- **Collect information on how NIST frameworks can be leveraged to enhance the security of your organization**
- **Learn how risk management and cybersecurity are essential for regulatory compliance**
- **Learn from risk management, security and OIG colleagues in Federal, State and Local Governments**
- **Learn how other Agencies are responding to the EO**

Who Should Attend:

- **CIOs, CISOs and Staff**
- **IT security and risk management practitioners**
- **IGs and Staff**
- **Program Managers responsible for risk management**
- **Government Employees who want to better understand organization risk management**
- **Executives who oversee risk management for the government**
- **All government executives, managers and staff who need to better understand risk management and implementing the President's Executive Order**

CEUs Awarded Upon Workshop Completion

**Potomac Forum is an Authorized Provider
of ICS(2) Credits**

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"Early Bird Reduced Registration to June 17th

"Send-A-Team" Registration Fees

No Press to Promote Candid Discussion

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- 1. Managing Government Records (RM) Training Workshop XIV
Agency Self Assessments are in to NARA
-- How Can You Improve Your Scores?
Tuesday, June 20, 2017**

- 2. How to Meet the Workforce Requirements of the President's
Executive Order 13781 Training Workshop
What Federal Executives, Managers, and Supervisors Need to Know to
Support the Goals of the Executive Order for Reforming the Federal
Government and Reducing the Federal Civilian Workforce
Wednesday, June 28, 2017**

- 3. Implementing the President's Cybersecurity Executive Order (EO)
Training Workshop
A "How To" Workshop to Implement the Requirements
of the EO and its Reporting Requirements
Wednesday, July 12, 2017**

**All Workshops at the
Willard InterContinental Hotel
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400 North Washington Street, Alexandria, Virginia, 22314, USA

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: ECOBOND Lead Paint Treatment
Sent: Thur 6/15/2017 12:02:04 PM
Subject: ECOBOND® - Lead Defender®, the Premier Lead Paint Treatment Product, Announces Donation Campaign

ECOBOND® will donate \$100 for every 100 gallons of ECOBOND® - Lead Defender® or ECOBOND® - Lead Defender® PRO

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ECOBOND® LBP - Lead Defender®, 14045 W. 66th Ave., Arvada, CO 80004

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Sustainable City Network
Sent: Thur 6/15/2017 2:19:04 AM
Subject: Top News: Growing Sustainable Communities Conference Slated Oct. 3-4

[View this e-mail in your browser.](#)

June 14, 2017

Growing Sustainable Communities Conference Slated Oct. 3-4

10th Annual Conference Hosted on Dubuque Riverfront

**Dubuque's Growing Sustainable Communities
Conference is held annually at the Grand River
Center in the Port of Dubuque, overlooking the
Mississippi River.**

DUBUQUE, Iowa – The Growing Sustainable Communities Conference celebrates its 10th anniversary at the Grand River Center in the Port of Dubuque on Oct. 3-4.

Registration is now open on the conference web site at www.GSCDubuque.com.

The Growing Sustainable Communities Conference is the largest and longest standing sustainability conference in the Midwest, according to Dubuque city officials, who have hosted the conference annually since 2008. Sustainable City Network, a Dubuque-based trade magazine, has co-hosted the event with city staff since 2011.

The conference includes more than 30 workshops, mobile tours and keynote presentations on the latest developments in community sustainability and resiliency initiatives.

This year's conference will include workshop speakers with a wide range of expertise, including representatives from the U.S. Environmental Protection Agency, the Arbor Day Foundation, the

Latest News
Iowa Economic Development Authority, the Econservation Institute, Great Plains Institute, Green Iowa AmeriCorps, the Iowa Clean Cities Coalition, the Midwest Renewable Energy Association, the Sustainable Iowa Land Trust, The Nature Conservancy and businesses such as General Electric, HDR, Shive-Hattery, and many others.

Ohio Hospitals' Energy Conservation Promotes Health, Cut Costs
Speakers from municipal governments large and small will also present case studies on the sustainability initiatives in their respective communities, from large cities like Minneapolis, New Orleans, Nashville, Kansas City, Charlotte and Des Moines, to Broward County, Fla., and the small and mid-sized communities of Brookings, S.D., Columbia, Mo., Huntington Beach, Calif., South Euclid, Ohio, Madison, Wis., New Lebanon, Ohio, and the Iowa communities of Cedar Rapids, Muscatine, Cedar Falls and Dubuque. Researchers from numerous universities and nonprofits will also present their findings.

[Read More...](#)

Avera eCARE Expands Reach with New Telemedicine Hub

SIOUX FALLS, S.D. -- Avera eCARE, based in Sioux Falls, S.D., is the most robust telemedicine network in the world offering comprehensive heal...

NRDC Sues to Block Trump's Methane Pollution Rollback

WASHINGTON -- The Trump administration violated the Clean Air Act in suspending critical protections against methane leaks and other dan...

Energy-Efficient Affordable Housing for Seniors Announced

ALBANY, N.Y. -- Governor Andrew Cuomo announced the completion of a \$9.3 million housing development for seniors in the city of Hornell. The p...

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Industries Urge Governor to Lead Transition to Clean Energy

CARSON CITY, Nev. -- National business groups representing the geothermal, solar, and wind power industries recently sent a letter to Nevada G...

The Best Complete Streets Policies of 2016 Announced

Product & Industry Announcements

WASHINGTON -- As of the end of 2016, more than 1,200 jurisdictions in the United States have made formal commitments to streets that are...

PennDOT Awards Jacobs Active Traffic Management Project Organizations Seek to Improve Water Infrastructure

DALLAS -- Jacobs Engineering Group Inc., was awarded a ten-year, multi-million dollar contract from the Pennsylvania Department of Transportation to partner with the U.S. Environmental Protection Agency to invest in...

EarthTronics Introduces Adjustable LED for Wide-Area Illumination

ALBANY, N.Y. -- The New York State Education Department proposed regulatory amendments to remove barriers to educational programs for children...

Administration Awards \$20.2 Million in Clean Communities Grants

MINNEAPOLIS -- SageGlass, manufacturer of smart electrochromic glass, announced the completed installation of 25,000 sq ft. of dynamic...

Mayor Launches EV Car Share Program for Disadvantaged Rockford Receives \$700,000 to Redevelop Brownfield Sites

LOS ANGELES -- A groundbreaking new car share program will help CHICAGO -- The U.S. Environmental Protection Agency announced the city of Rockford, Ill., has been selected to receive a \$700,000 Brownf...

Boulder Steps Up Commitment to Transparency and Innovation

WASHINGTON -- City Manager Jane Brautigam will sign the City of Boulder's open data policy, designed to increase transparency and accoun...

Communities Receive Funds for Scrap Tire Market Development

LANSING, Mich. -- Old vehicle tires will soon find a new purpose thanks to \$2.9 million in grants from the Michigan Department of Environmenta...

'State of Downtown' Report Captures Steady Growth

FORT WORTH, Texas -- Downtown Fort Worth has maintained a 92 percent average retail occupancy rate and experienced a 97.5 percent increase in ...

Online Course

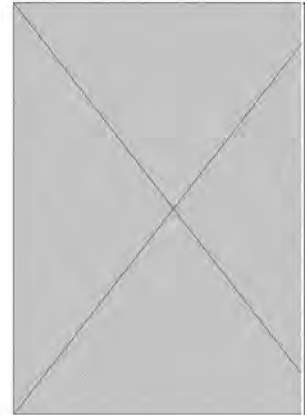
Lean Thinking: Process Mgmt Made Easy

Sustainable City Network and NWETC have teamed up to offer this 6-hour online course June 20-22 on the Lean process improvement system.

This course will challenge your ideas about how you think about and evaluate the work you do.

Our Lean Master certified instructor, Brion Hurley, is principal Lean consultant at Rockwell Collins. He will introduce the history of Lean concepts, derived from the Toyota Production System, and explain how and why they have come full-circle back to the United States.

Results of Lean initiatives have led to increased customer and stakeholder satisfaction, reduced costs, reduced risks, increased sales,



Vol. 23: Read it now

and more flexible
and agile
organizations.
Perhaps the largest
benefit has been
more engaged
employees, where
people enjoy the
work they do.

Examples of Lean
successes can be
found within city
and state agencies,
utilities, nonprofits,
law firms, military,
public schools,
startup companies,
movie studios and
even farming!

[Read more...](#)

Online Course

**Creating a
Sustainability
Strategy**

Sustainable City
Network will present
a webinar series in
July for any
personnel who are
responsible for
developing
sustainability plans,

Sustainable City Network operates a website (www.sCityNetwork.com), customized e-newsletters, online training, consulting, and interactive tools dedicated to providing quality and timely information on sustainability products, services and best practices to business, government, education and healthcare.
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**Sustainable City
Network**
801 Bluff Street
Dubuque, IA 52001
563.588.3853
Sustainable City
strategy for a
community,
business or
institution.

The 6-hour online course, Creating a Sustainability Strategy for Your Organization, will be delivered live on July 11-13. Sessions will be recorded so registrants may attend live or via on-demand streaming video.

This course, featuring veteran instructor Antonia Graham, will focus on the implementation and strategic thinking that is required to implement a Sustainability Plan. This course will teach you how to incorporate storytelling and systems thinking into a strategic plan that gets your plan implemented and enables you to move the needle further and faster to create a more sustainable community.

This course will be presented in three 2-hour sessions held on consecutive days, July 11-13. (Group rates available.)

Sustainable City Network operates a website (www.sCityNetwork.com), customized e-newsletters, online training, conferences and other interactive tools dedicated to providing quality and timely information on sustainability products, services and best practices to leaders in government, education and healthcare.
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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Conference Notification
Sent: Wed 6/14/2017 4:47:56 PM
Subject: Confirmation: Reform Plan Check-in with OMB and Agencies on June 16, 2017 at 11:00 AM Eastern Time

Dear Mike,

Here is your personalized dial-in information for the teleconference **Reform Plan Check-in with OMB and Agencies**.

The conference begins at 11:00 AM Eastern Time on June 16, 2017; you may join 10 minutes prior.

Dial-in: [Ex. 6 - Personal Privacy](#) or [Ex. 6 - Personal Privacy](#) or [Find an Alternate Number](#)
Access Code: [Ex. 6 - Personal Privacy](#)
Attendee ID: [Ex. 6 - Personal Privacy](#)

(These instructions are unique to you, do not share)

[Add to your calendar](#)

If you need technical assistance, call the Help Desk at 1-888-796-6118 or 1-847-562-7015.

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Brad Charleson
Sent: Wed 6/14/2017 4:41:27 PM
Subject: [SPAM] PC refresh question

Hi Mike,

Has your organization evaluated PCmover Enterprise from Laplink?

I'm not sure if you are the right person to answer; if not, can you please let me know who is responsible for PC refresh/deployment activities (including software upgrades and new hardware)?

Our unique solution transfers data files/folders, user profiles, settings, and even applications (full programs or just settings) from an old to a new Windows PC, regardless of operating system or hardware differences supporting all versions of Windows from XP to Windows 10. And, it supports all in-place upgrade scenarios.

When evaluated against USMT, most organizations select PCmover Enterprise because it is easier to set up and provides a more accurate transfer. It's the most cost effective way for IT to manage PC refresh projects.

Please let me know if you (or someone else in your organization) would like complimentary licenses to evaluate PCmover - or even set up a pilot project.

Thanks in advance,

Brad Charleson

b.charleson@laplink.com

425-952-6042

www.laplink.com

600 108th Avenue N.E., Suite 610
Bellevue, WA 98004, USA

P.S. Right now, you can download a free full-version evaluation of PCmover Enterprise (or learn more) [here](#). You'll quickly understand the benefits and cost savings PCmover will provide to your organization.

This email was sent to flynn.mike@epa.gov. If you no longer wish to receive these emails you may [unsubscribe](#) at any time.

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Doug Mashkuri
Sent: Wed 6/14/2017 3:46:50 PM
Subject: FW: join us tomorrow?

Hi Mike,

Happy hump day! Just making sure you saw the email below about tomorrow's GIS MapUp at 1776 in D.C. starting at 6pm. You can come whenever you like, we'll hear presentations from 6:30-7:30pm on how to better understand predictive analytics and integrating intelligence activity with GIS.

Register for free: <http://direct.govloop.com/smart-maps>

See you tomorrow!
Doug Mashkuri
GovLoop, Community Director

From: Team GovLoop
Date: June 13, 2017 at 11:00 AM
To: Doug Mashkuri
Subject: This Thursday: Network and Learn

Hi Mike,

Sometimes multitasking can get a bad rap. But we believe that often multitasking can be really awesome, especially when you're networking, learning, and enjoying complimentary drinks and apps at the same time.

This Thursday, June 15, starting at 6pm:
How to Unlock the Full Potential of Your Data with Integrated Intelligence

Join us and your gov peers at 1776 in Washington, D.C. after work on Thursday for presentations on how GIS is helping integrate and unlock insights in gov data.

In addition to networking or enjoying a drink and lights apps, from 6:30-7:30pm, you'll hear from:

- Tracy Toutant, Deputy Chief of Customer Success, GEOINT Services Office, National Geospatial-Intelligence Agency
- Brooks "Jon" Breece, Geospatial Capabilities Advancement Branch (ATSGA), National Geospatial-Intelligence Agency
- John Brandt, Diplomatic Courier and Chief of Classified Pouch, U.S. Department of State
- Ben Conklin, Industry Manager Defense, Intel and National Security, Esri

Register for free now: <http://direct.govloop.com/smart-maps>

Hope to see you there,
Doug Mashkuri
GovLoop Community Manager

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Gov Workforce Performance & Responding to EO
Sent: Wed 6/14/2017 3:33:59 PM
Subject: [SPAM] June 28th - Now 14 Gov Leaders to Speak: Managing Gov Performance & Implementing EO Workforce Requirements

**Workforce Requirements
of the President's
Executive Order 13781
Training Workshop
June 28, 2017**

Confirmed Speakers
Terry Gerton
President & CEO
National Academy of
Public Administration
(NAPA)

Bob Corsi
Secretary of Board of
Directors
Senior Executives
Association (SEA)
Former Assistant Deputy
Chief of Staff for
Manpower, Personnel and
Services
Headquarters, U.S. Air
Force

Rebecca Ayers
Performance Management
Solutions, OPM

Tom Gilbert
Assistant Director of
Strategic Issues, GAO

Deb Tomchek
Former Director of Human
Resources (HR)

DOJ and DOC

Jim Read
Director, Policy and
Evaluation
Merit Systems Protection
Board

Jeffrey Neal
Senior Vice President, ICF
Former CHCO at DLA and
DHS

Dr. Fred Soto
Supervisory Manager for
Employee Engagement,
Diversity and Veterans
Outreach
Office of Energy
Efficiency and Renewable
Energy
Department of Energy

Kimberly Steide
Program Manager for
Human Capital Planning,
HRSTAT, and Metrics
Department of the
Treasury

Dianne Hawkins
Program Manager,
Personnel Demonstration
Project
U.S. Army Research
Laboratory

Marcus Brownrigg
Strategic Partnership and
Communications
Advisor

Office of the CEO
Corporation for National

**Improving Performance -
Workshop Not For Just Human
Capital -**

**Please Review and Forward to
Your Government Executives,
Managers and Staff
Who Play a Part in Meeting the
Workforce Requirements of the
President's Executive Order**

Potomac Forum Training Workshop

**The President's Executive Order:
How to Meet the Workforce
Requirements of the
President's Executive Order
13781
Training Workshop**

*What Federal Executives, Managers,
and Supervisors Need to Know
to Support the Goals of the Executive
Order for
Reforming the Federal Government
and
Reducing the Federal Civilian
Workforce*

**Date: Thursday, June 28,
2017**

Sponsored by:

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the leader in high quality training since 1984

www.PotomacForum.org

and Community Service
(CNCS)

(703) 683-1613
info@PotomacForum.org

Lou Kerestesy
Founder & CEO
GovInnovators

Location of Workshop:
Willard InterContinental Hotel
Washington, D.C.

Mika Cross
Federal Workplace Expert

Potomac Forum Training Workshops
are 100% Educational
and NOT Sales or Marketing Events

The Press is Not Permitted to
Encourage
Candid Discussion in our 100%
Learning Environment

Who Should Attend:

- Federal supervisors and managers
- Federal HR practitioners and anyone responsible for implementing agency restructuring plans
- Inspector Generals and Staff
- Federal employees or members of employee affinity groups
- Communications practitioners responsible for leading change management and internal communications campaigns

Overview:

The president issued an executive order (EO) on March 13, 2017 which requires agencies to plan and implement long-term workforce reductions and incorporate the plan as a government-wide workforce priority into their Agency Strategic Plan and/or Human Capital Operating Plan.

This Potomac Forum training workshop for government will provide information for agency executives, managers, and staff to respond to the EO.

Experienced human capital executives and experts will share their insight and experience in developing and implementing long-term and near-term workforce management practices that will help attendees understand how best to improve performance, increase accountability, and reduce costs.

This workshop will provide you with practical, easy-to-implement tools and resources to help you achieve the best results through your agency's efforts to restructure, reshape and eliminate inefficient functions to achieve the goals of EO 13781 while enhancing employee performance to increase mission efficacy and increase retention.

What You Will Learn:

- **A framework to plan for reorganization and functional consolidation**
- **Avoiding common pitfalls to managing performance and conduct in the modern workplace**
- **Where to find practical support mechanisms, resources and help for managers and supervisors**
- **How to prepare the workforce for activities in cost cutting, reshaping, reducing, and reorganization**
- **Managing change through effective internal and external communications**
- **Driving positive outcomes by leveraging the Federal Employee Viewpoint Survey Results into actionable steps that help cultivate an inclusive culture designed to retain top talent and optimize employee potential**

Why You Should Attend:

- **Learn proven management strategies to demonstrate return on investment, cost savings, and enhanced management efficiencies from developing an effective long-term workforce reduction plan**
- **Understand how to leverage alternative service delivery models and streamline mission support functions to provide greater efficiency while improving quality**
- **Maximize employee performance by focusing on concrete steps to increase performance and effectively deal with poor performers**
- **Optimize employee recognition programs designed to recognize, reward and retain top performers**
- **Build your toolkit for cultivating a culture of engagement**

**and accountability designed to achieve enhanced
organizational and individual performance**

Format:

Lecture, guest speakers, and practical exercises.

CEUs Awarded Upon Workshop Completion

Press is NOT Invited to Register or Attend

"Send-A-Team" Registration Fees

No Press to Promote Candid Discussion

Registration and Information:

www.potomacforum.org

Call: (703) 683-1613

Info@PotomacForum.org

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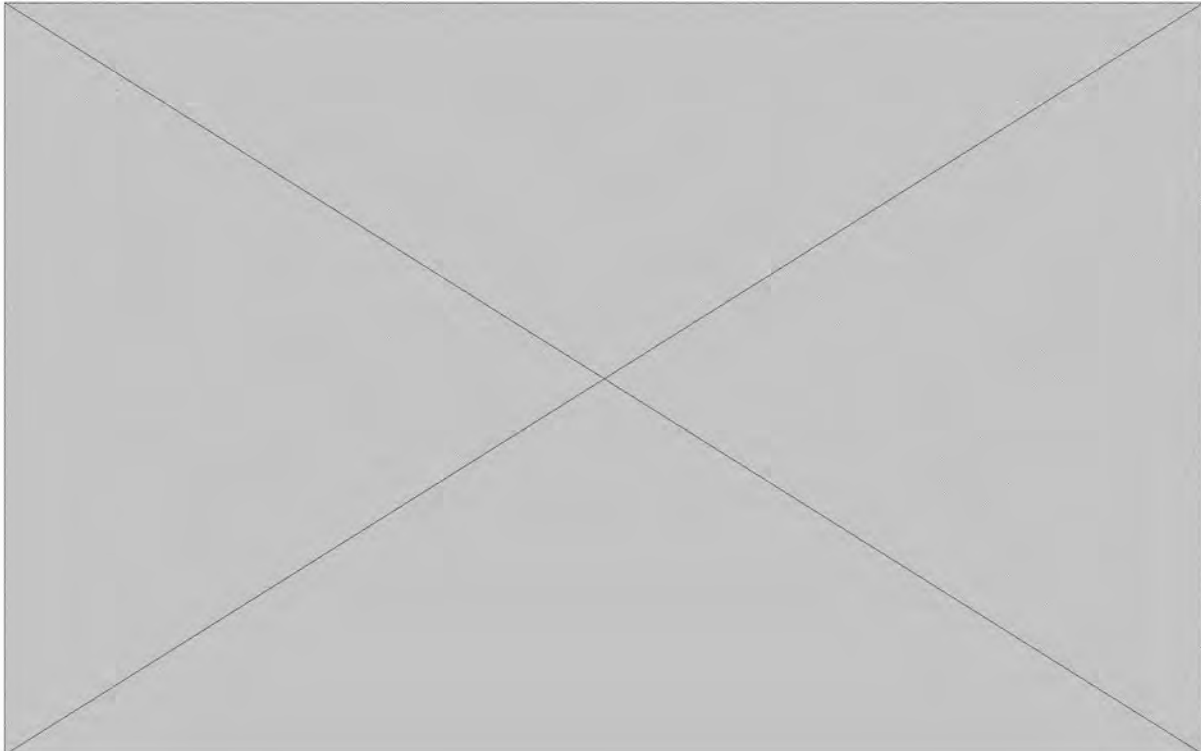
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400 North Washington Street, Alexandria, Virginia, 22314, USA

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: OpenText
Sent: Wed 6/14/2017 3:29:47 PM
Subject: Map Your Journey

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Dear Mike,

Today's disruptive technologies, like the Internet of Things and Artificial Intelligence, have transformed both enterprise and consumer spaces, re-shaping the way we work.

Be a part of the digital future. Be your agency's #ChangeAgent. [Register now](#) to save your seats and learn more at use Code **EW2017TOGOV** to get the government rate of \$995.

The magnitude and depth of Enterprise World offers not only learning and growth opportunities for navigating these disruptive technologies, but also provides endless networking opportunities by bringing together a very diverse range of attendees across the globe. It also allows for industry specific programming.

We will help you with your Enterprise World journey by providing you with a "[Map Your Path](#)" overview for each of the breakout tracks. This "map" will help guide you during your 3 days with us and outline all there is to see and do with relation to your area of interest. It includes can't miss breakout sessions, keynotes, expo floor demos, theater presentations, labs and more.

Two of this year's Government Keynotes:

Mr. Gilbert Sabat, former CIO of Region of Peel

Keeping Up With Constituent Needs in an Evolving Digital Age

Mr. Gilbert Sabat, former CIO of Region of Peel, will share his experiences with modernizing services by building incremental systems from a client-centric integrated, unified hub. The public now demands the same quality and level of service from the government as the services they consume from the private sector.

Murtaza Masood - CIO, Los Angeles County Department of Human

Resources – Content Management Track Keynote

Currently serving as CIO at Los Angeles County Department of Human Resources, Murtaza Masood is an innovative executive with business transformation and technology enablement experience in dynamic, complex environments. Industry experience spans across verticals due to hands-on business and technology consulting experience. An enterprising visionary proven to deliver business process and organizational change to bring tangible results and positive impact. Mr. Masood has overseen the development of a strategic transformation roadmap for DHR that enables them to digitize key HR operations across the County. He has embarked on a workforce automation strategy that leverages business process orchestration and big data across the enterprise.

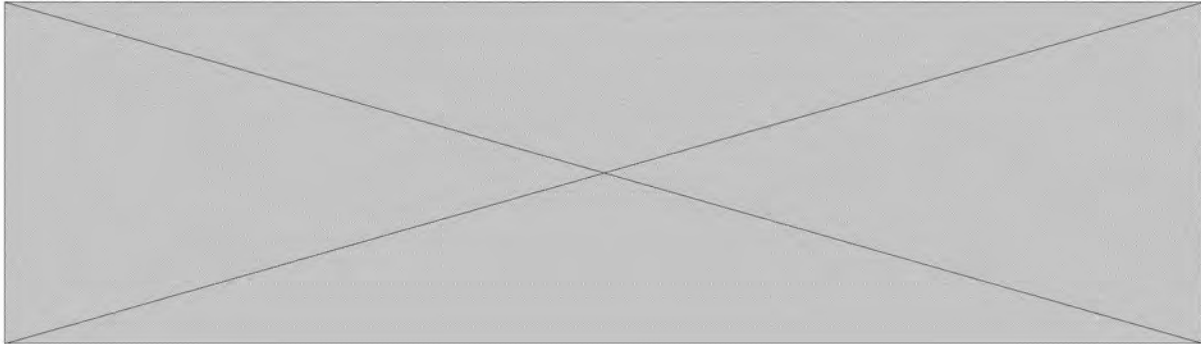
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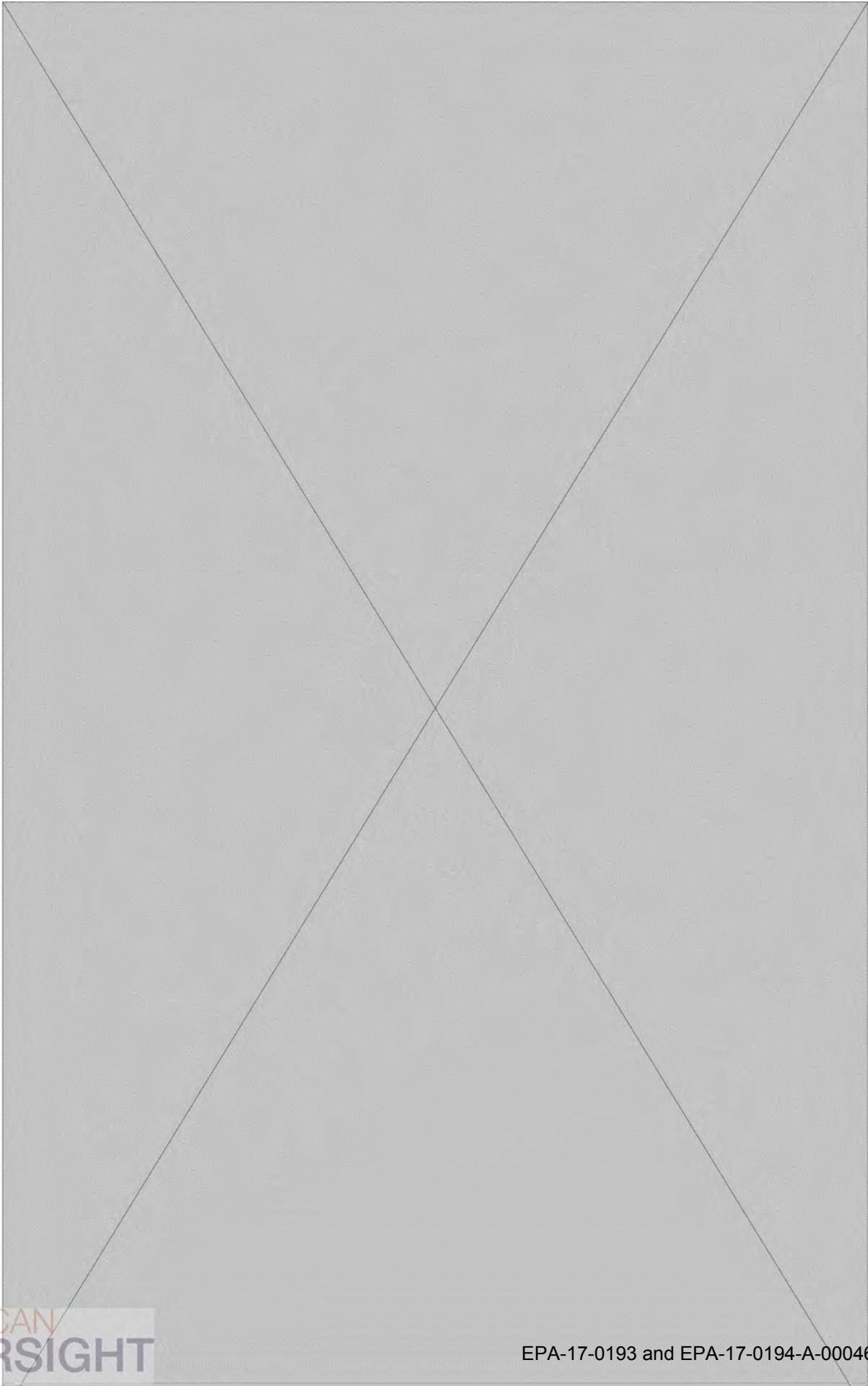
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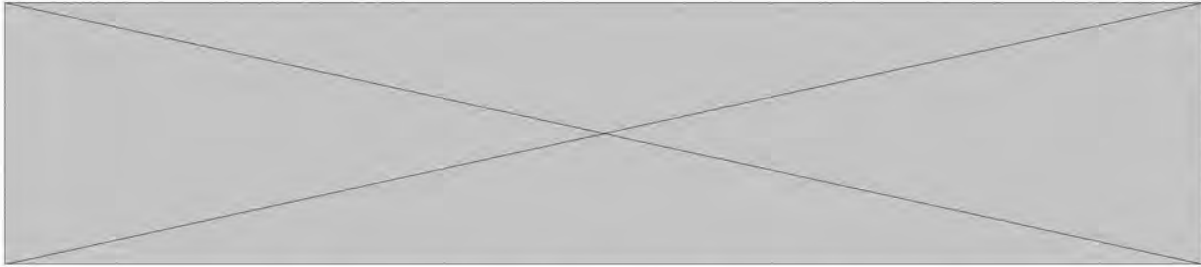
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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: International Commerce and Marketing Corp.
Sent: Wed 6/14/2017 3:20:32 PM
Subject: ATTENTION - OCONUS Customers! Get Door to Door Shipping to Your Facility for Nearly 2 Million Contract Items!







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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Hewlett Packard Enterprise
Sent: Wed 6/14/2017 3:20:11 PM
Subject: New computing platform seeks adventurous developers

06.13.2017

Emerging Tech_

New computing platform seeks adventurous developers

Digital Transformation_

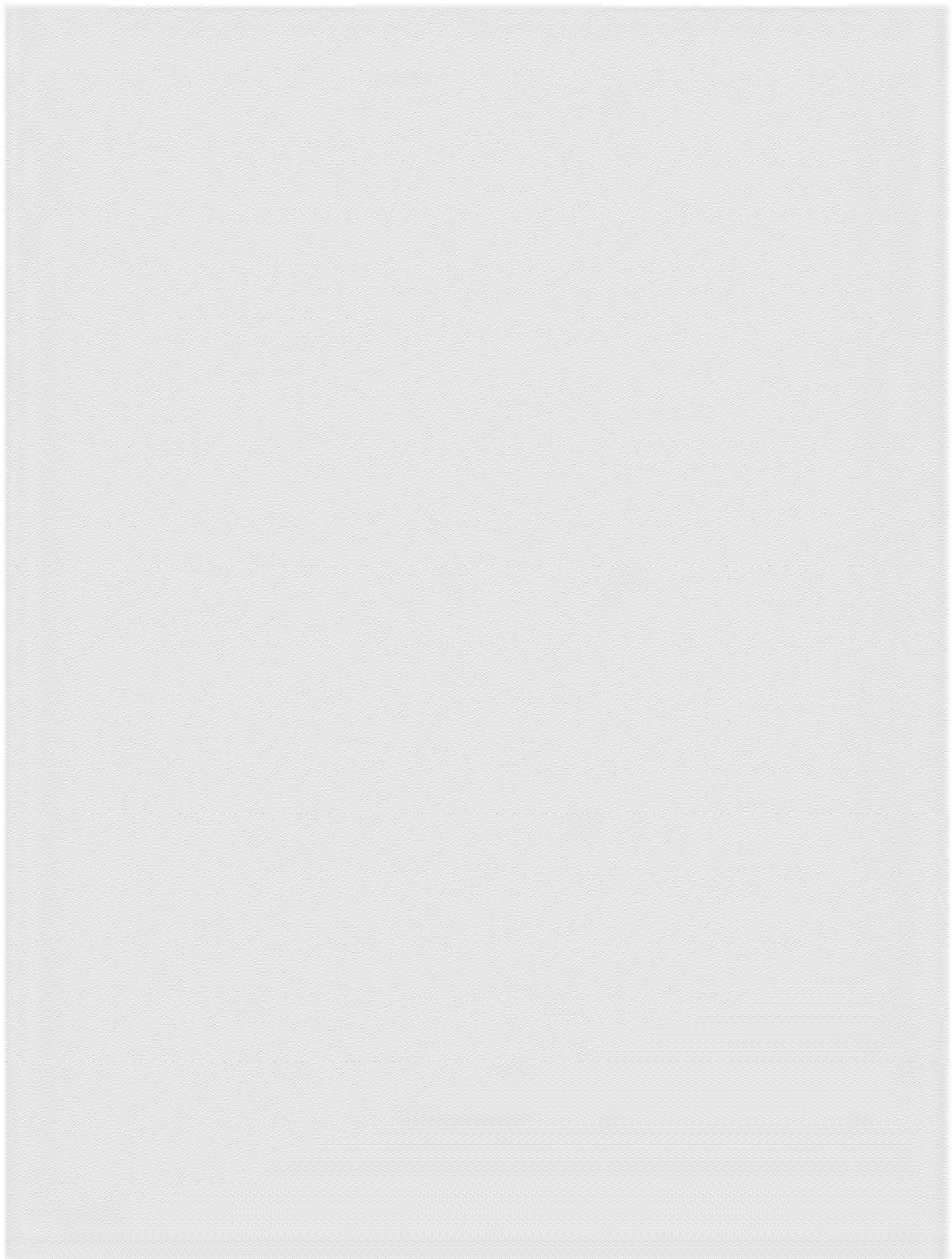
IT as a service: Cornerstone of the digital enterprise

DevOps_

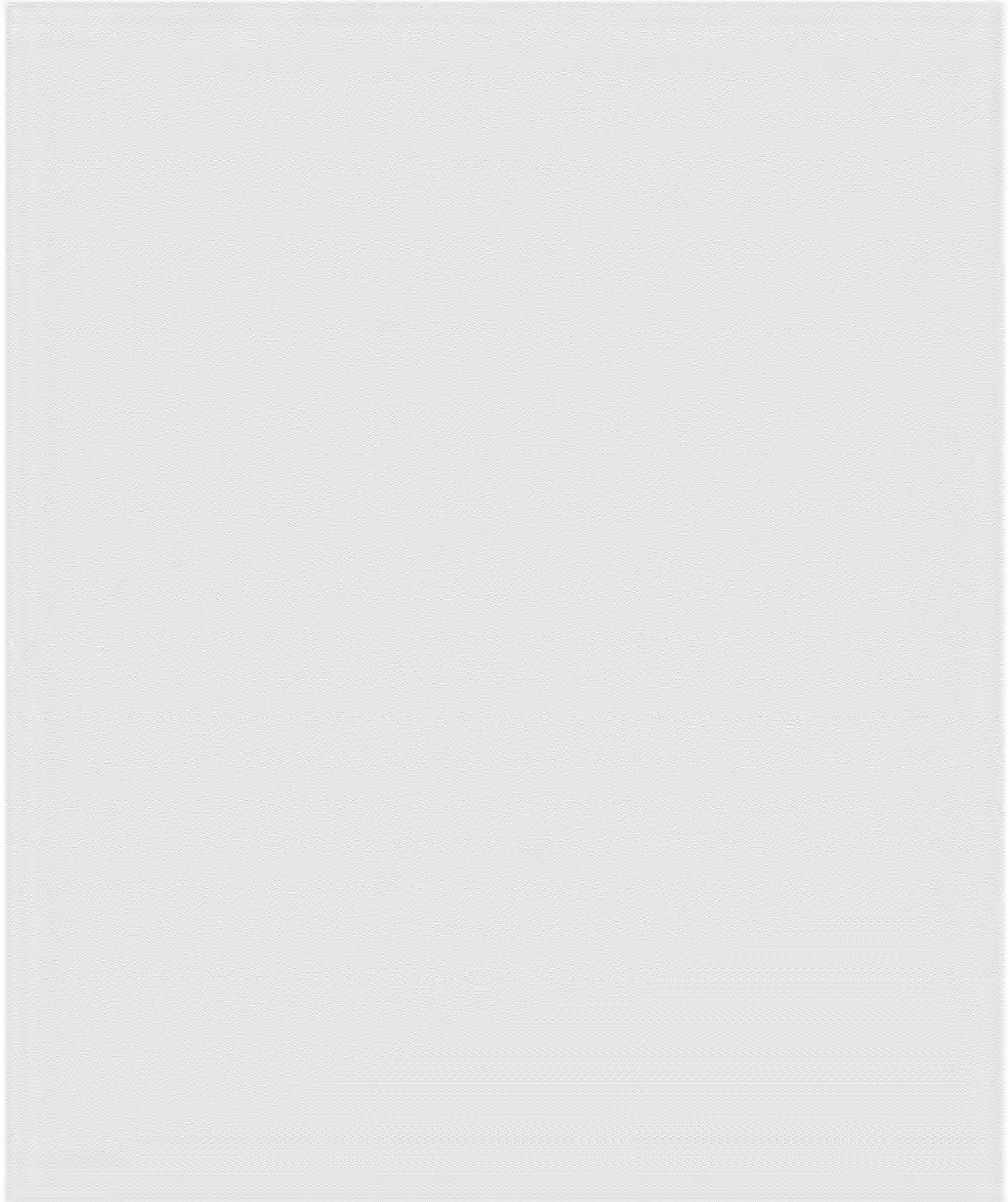
How one IT director overcame obstacles to build a more flexible infrastructure

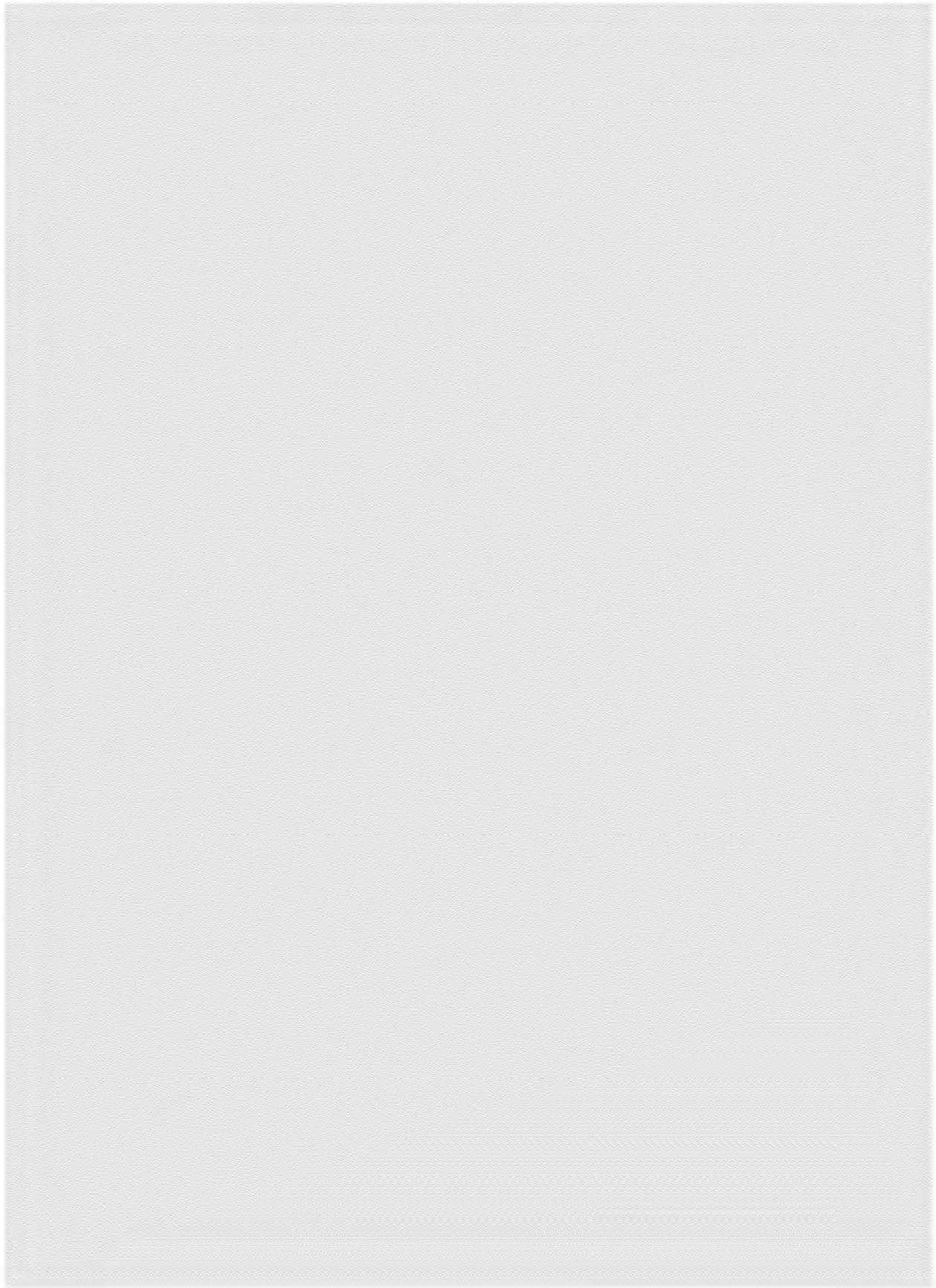
Emerging Tech_

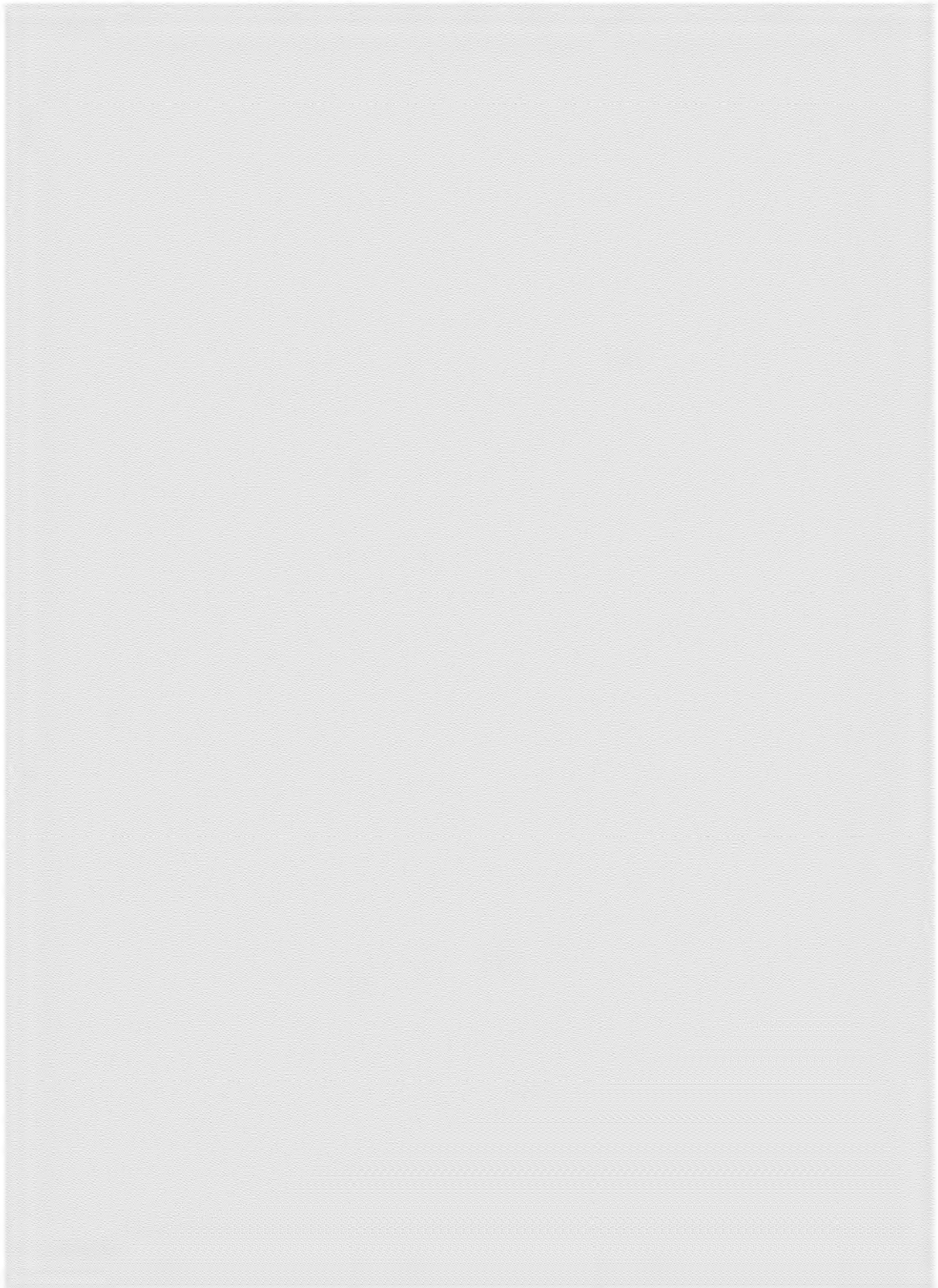
IT trends: What you missed at MIT CIO 2017



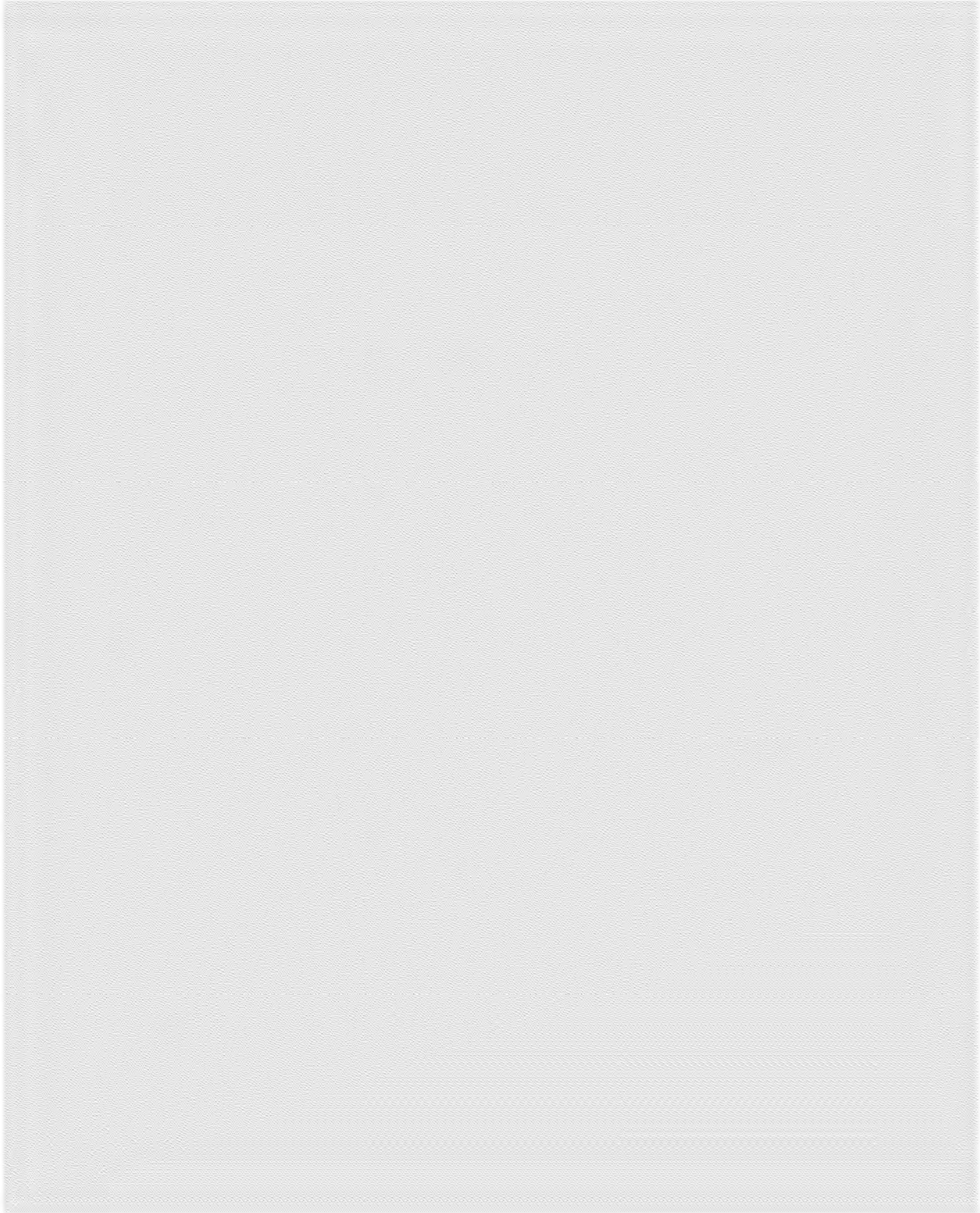
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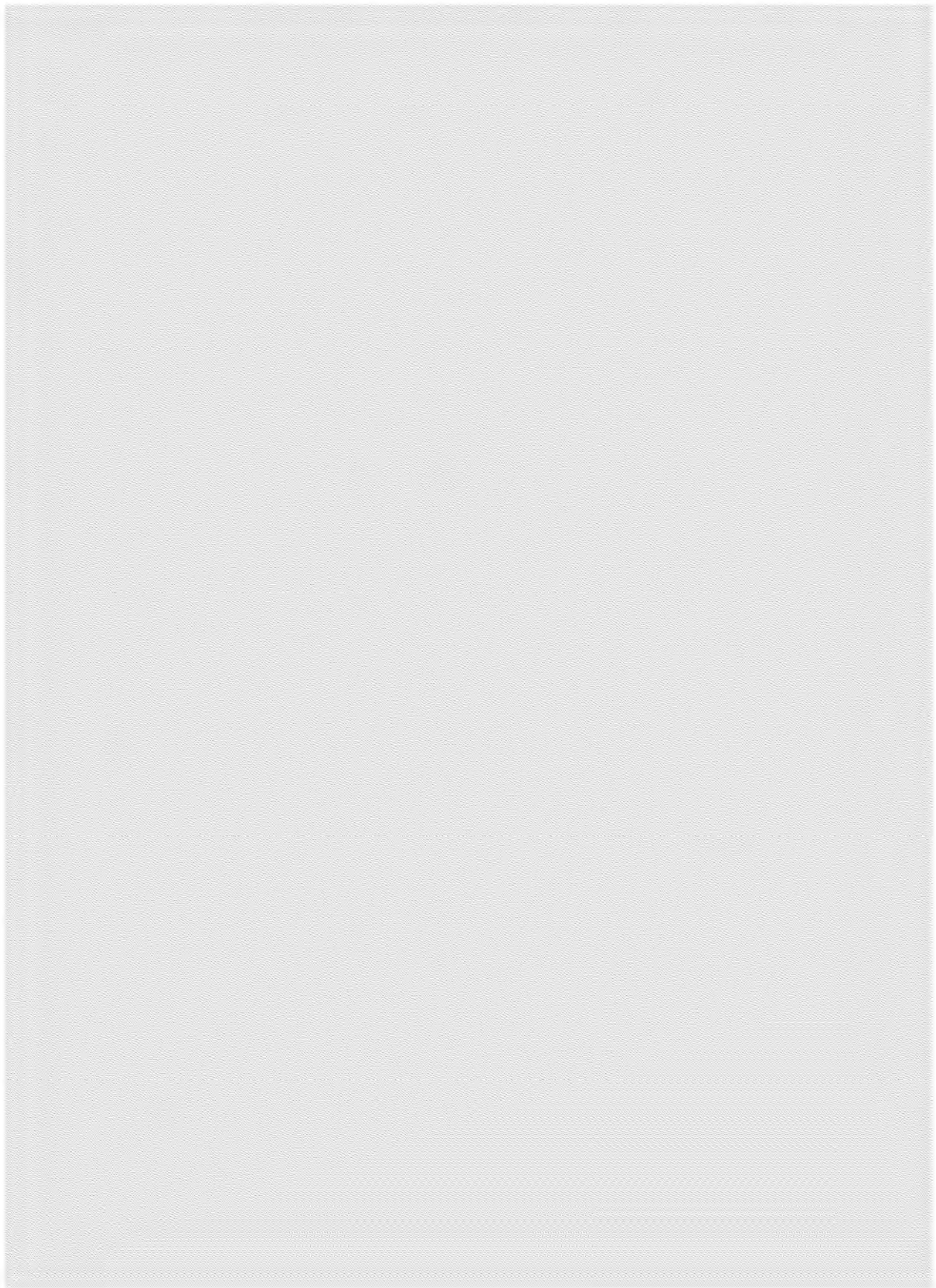


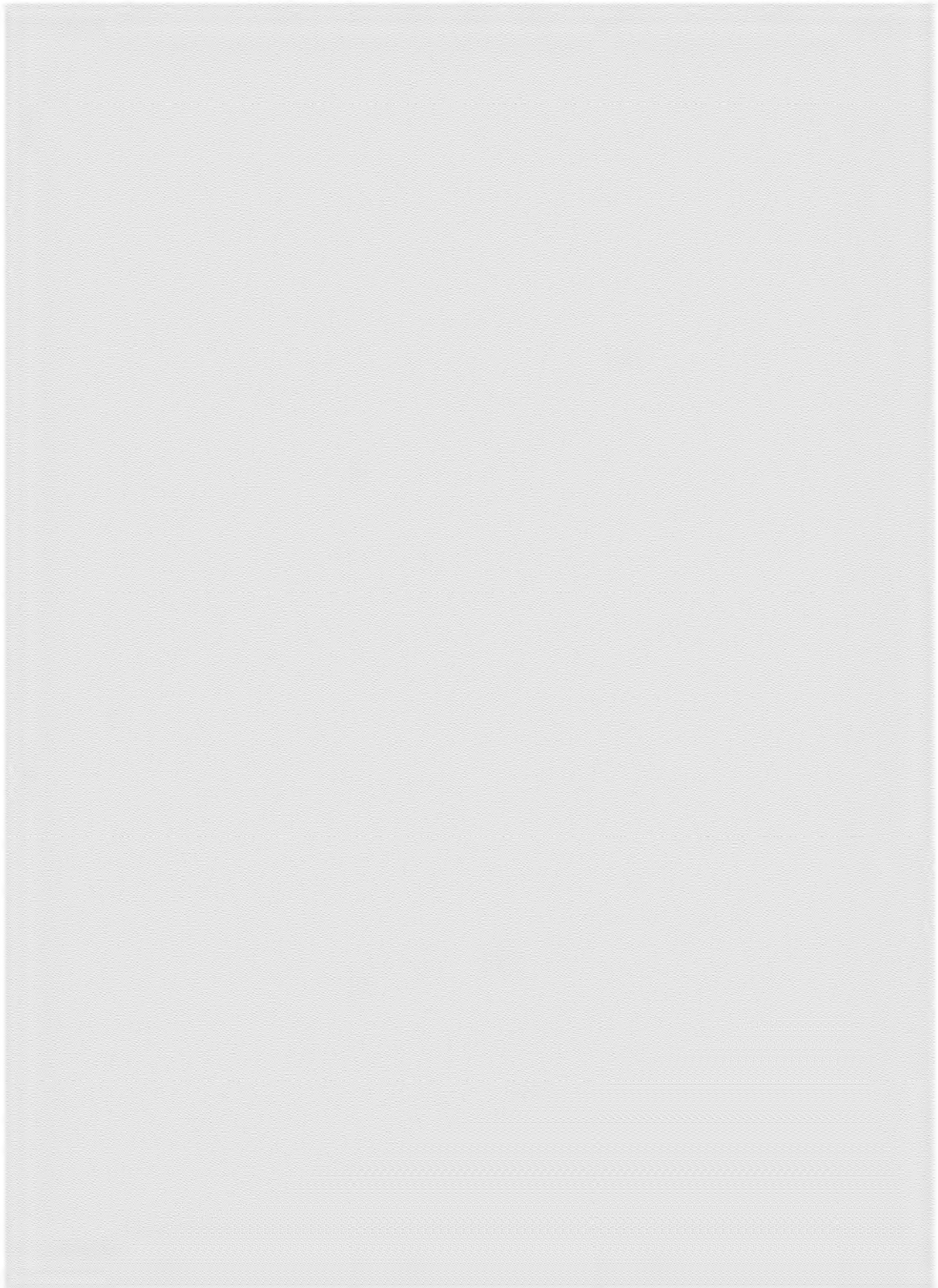




Crowdsourcing social innovation at CodeCon

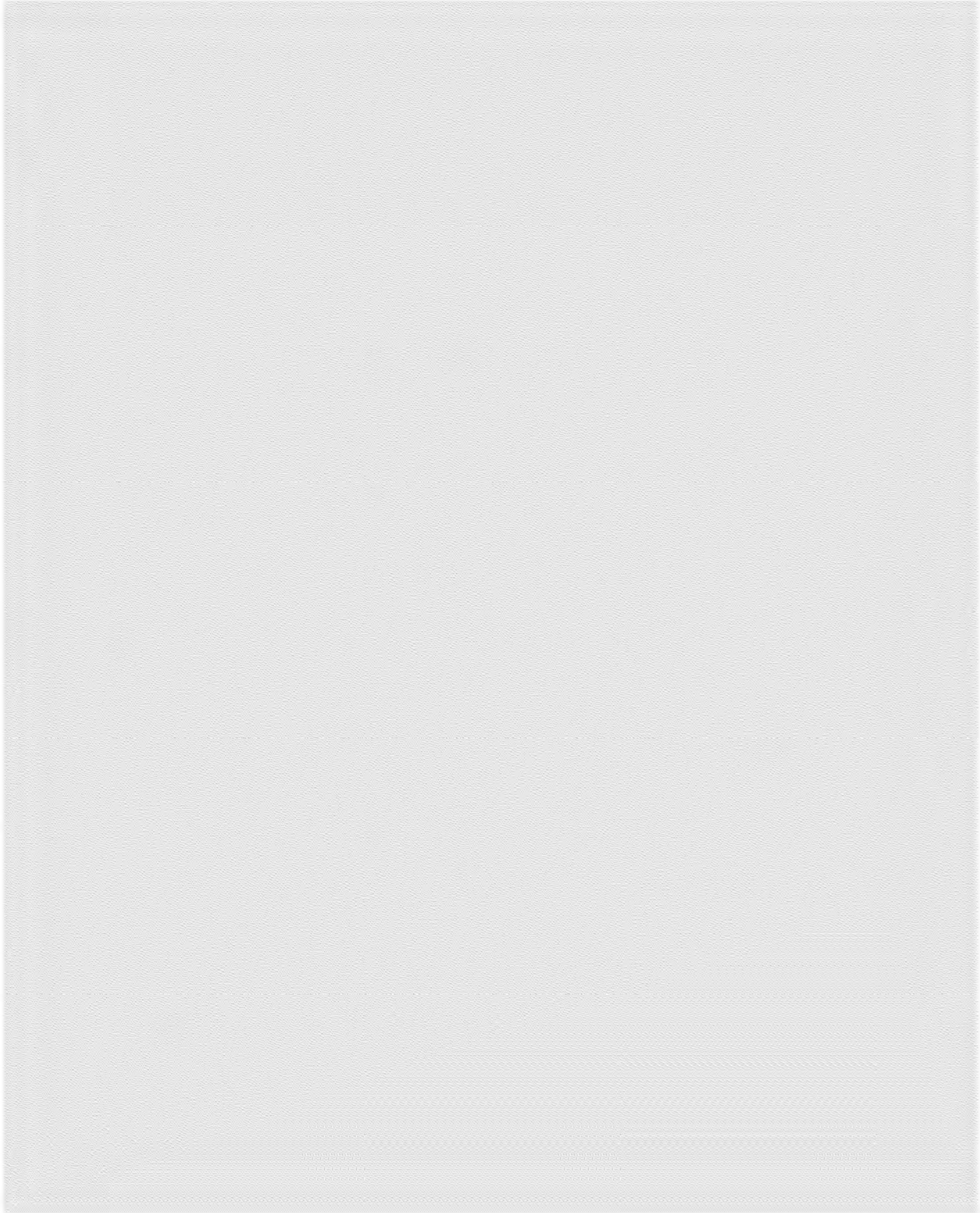


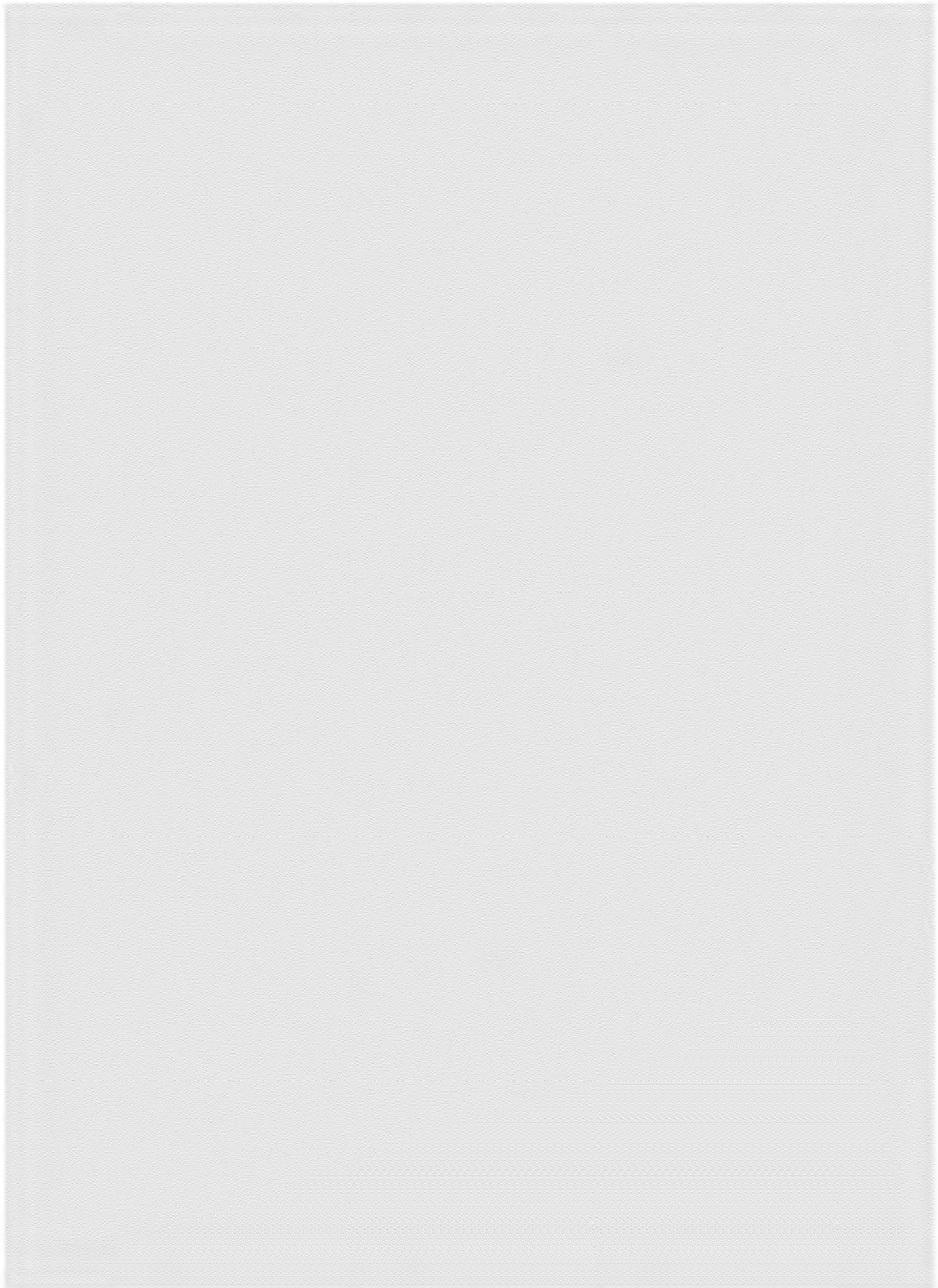




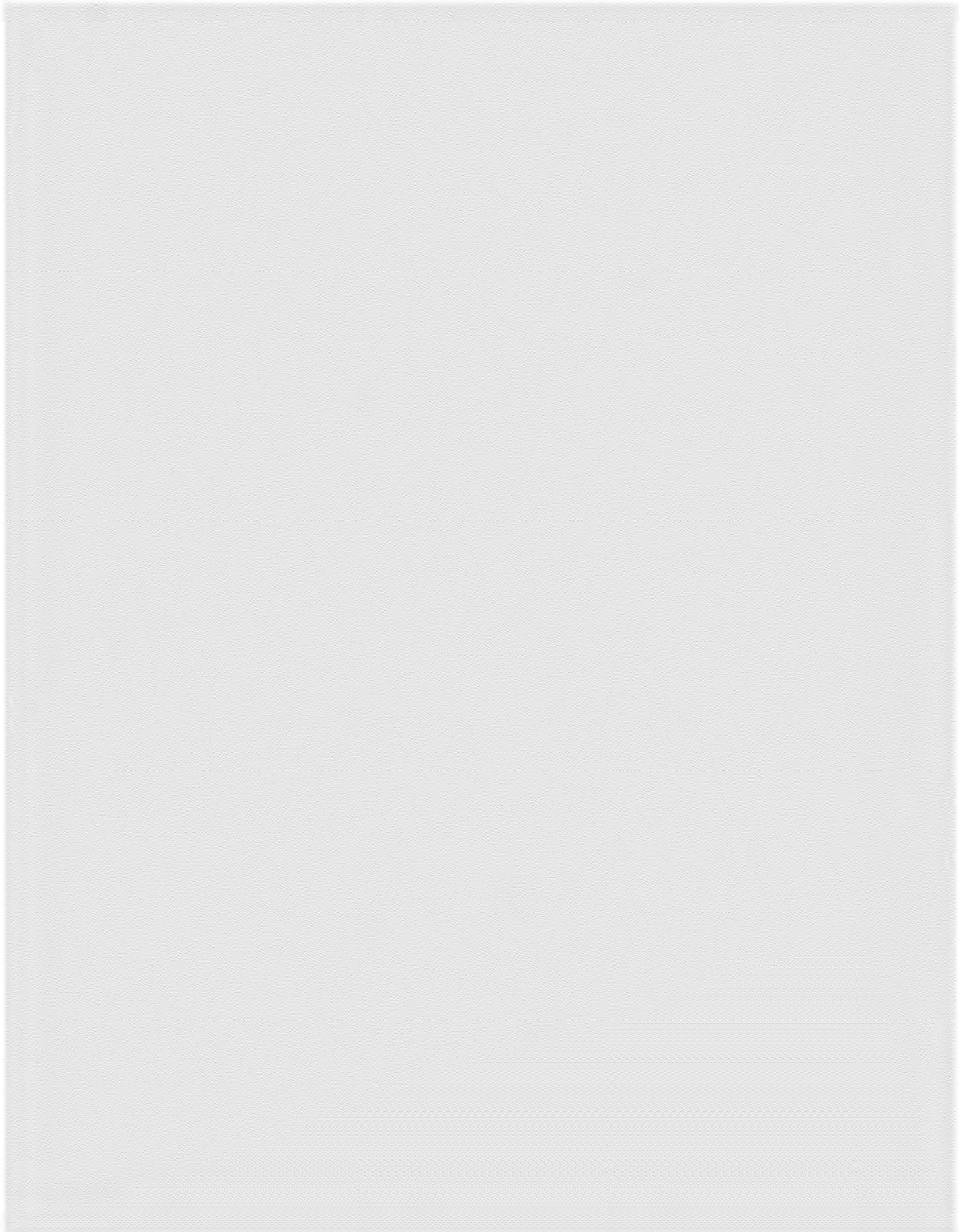
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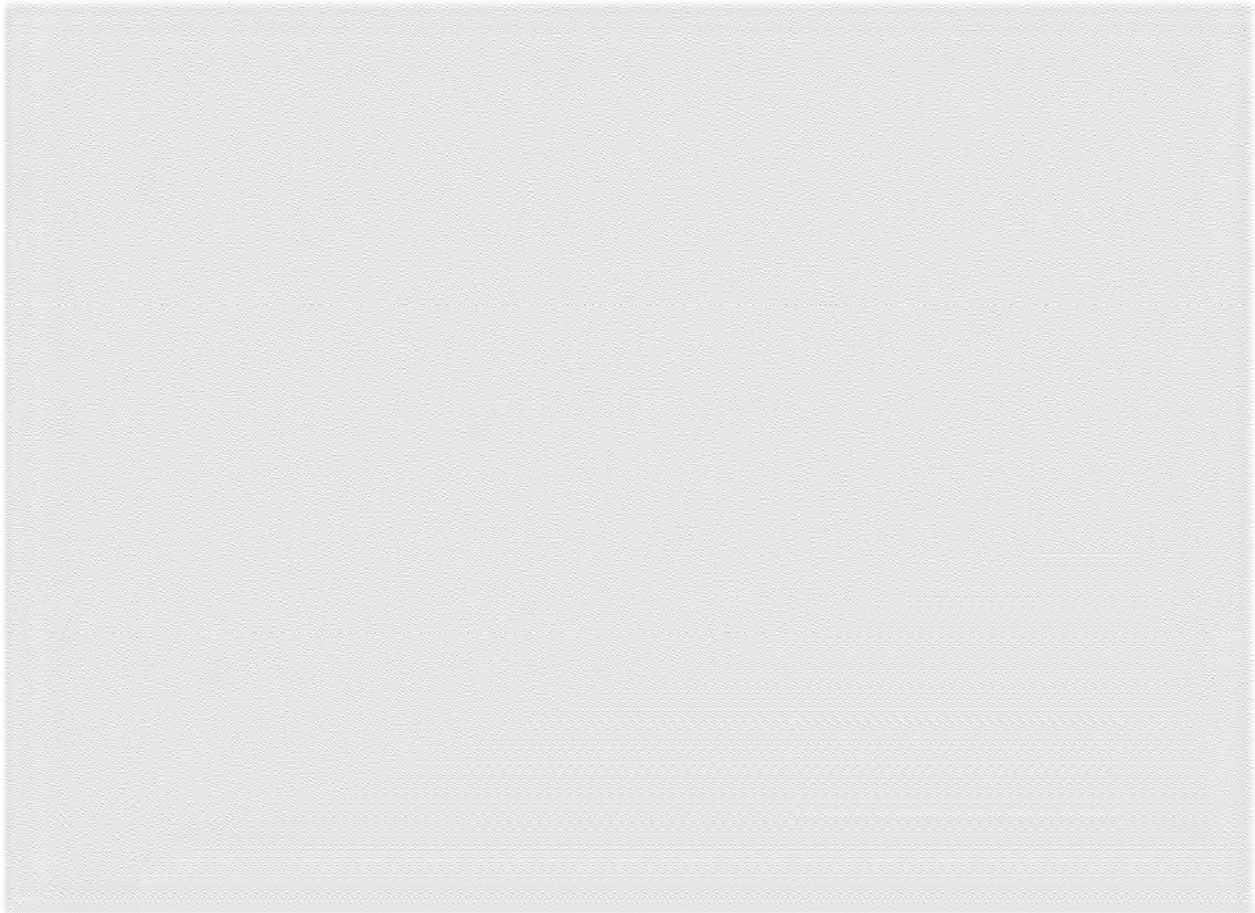
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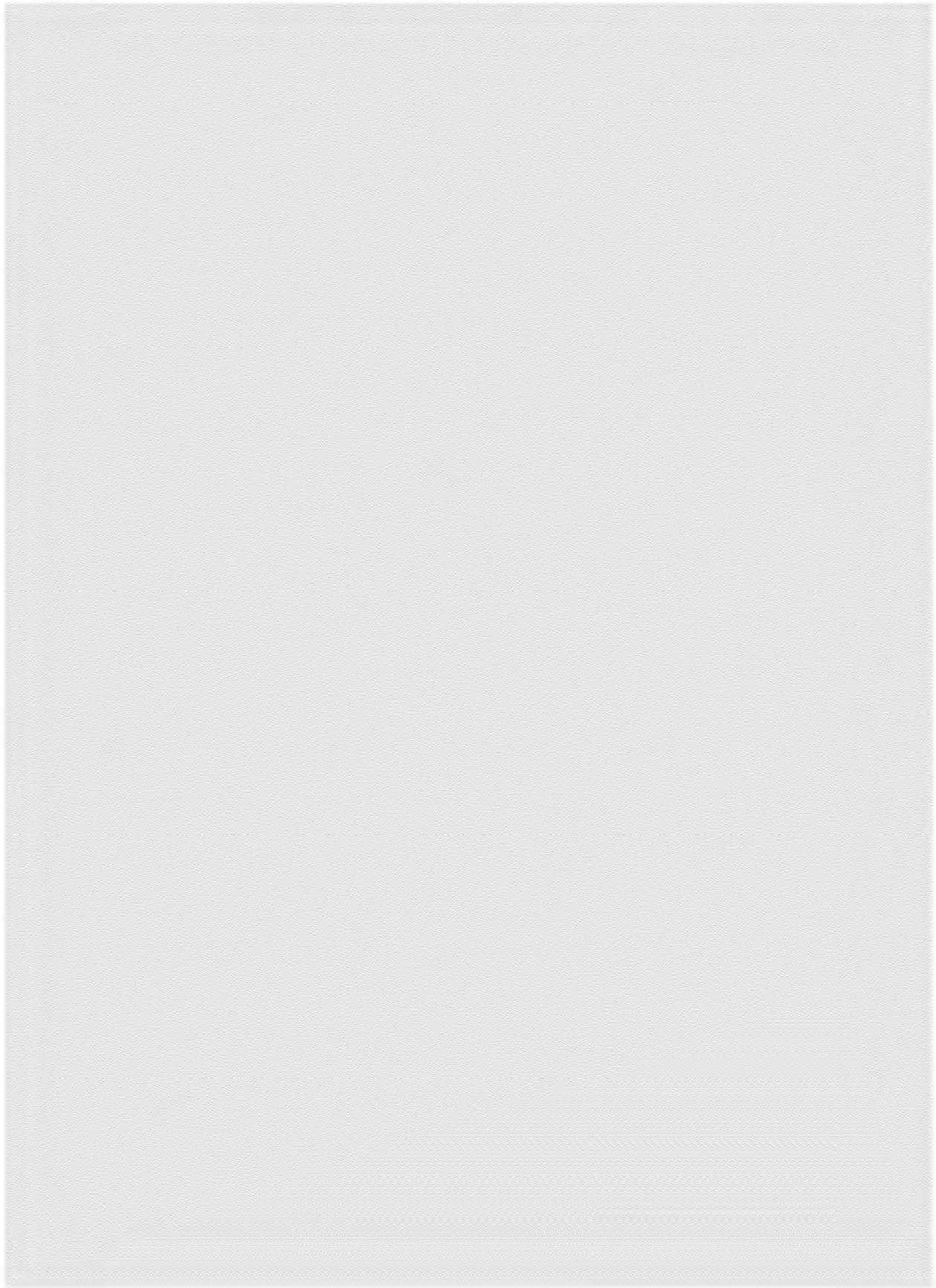
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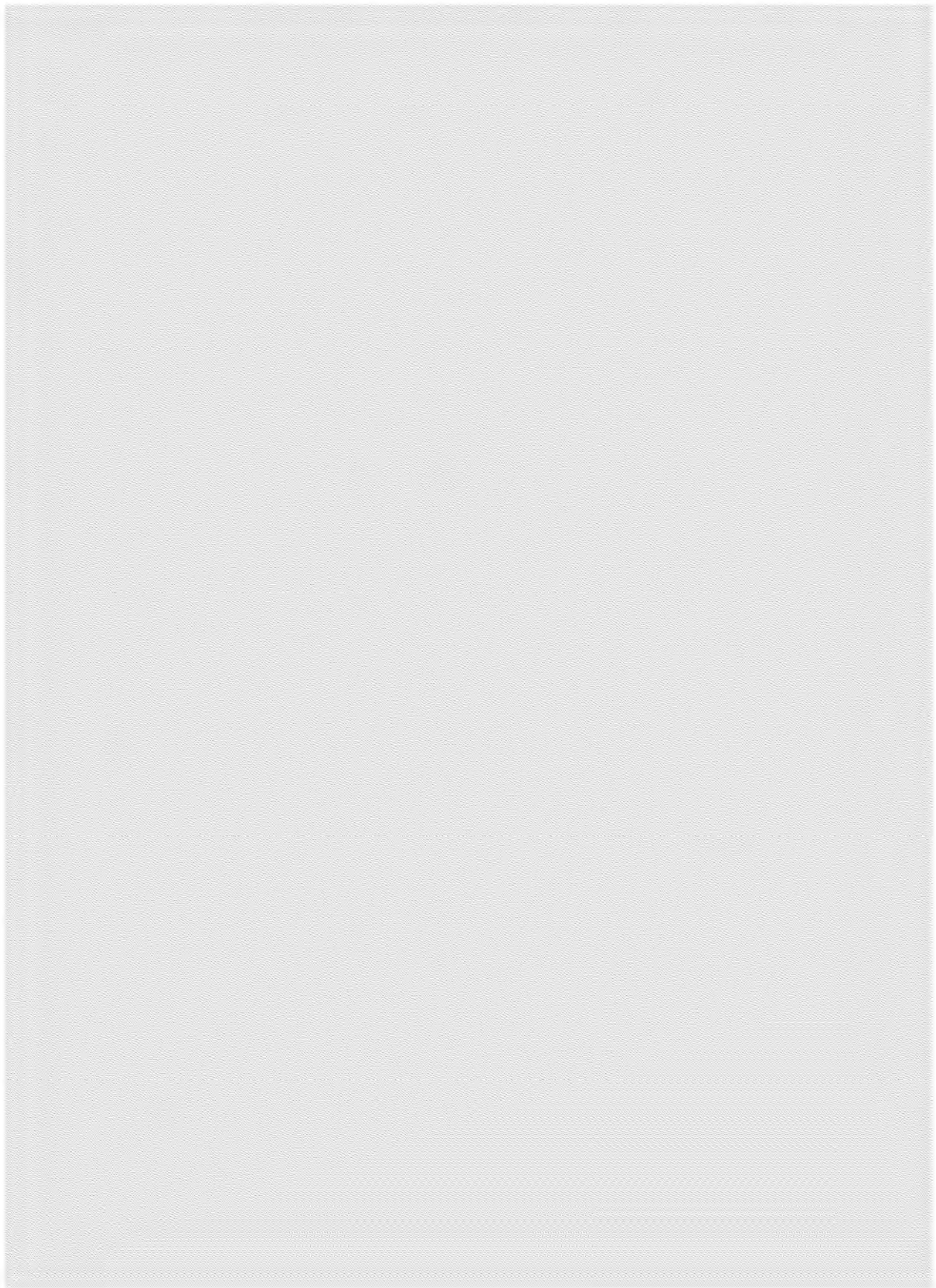
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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Oracle Corporation
Sent: Wed 6/14/2017 3:08:38 PM
Subject: Webcast & Live Chat: Best Practices to Speed Up Your Database Deployments

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Webcast & Live Chat: Oracle VM Templates Best Practices for Rapid Oracle Database Deployment

June 21, 2017

10:00 AM PT / 1:00 PM ET



Get 10X Faster Deployment

Hi Mike,

Today's businesses are demanding IT to deliver more new services faster than ever before. IT needs to rapidly deploy multi-tier applications reliably and consistently. With more than 100 prebuilt, preconfigured, pretested templates for Oracle applications, Oracle has done the heavy lifting for you, enabling the virtualization of complex applications with near-zero application knowledge.

Join this webcast to interact with Oracle experts, learn more use cases for Oracle VM Templates and get in-depth knowledge on how to easily deploy Oracle Database 12c and Oracle RAC using Oracle VM Templates.

June 21, 2017

10:00 AM PT / 1:00 PM ET

- ☒ Technical Overview
- ☒ What's New
- ☒ Best Practices
- ☒ Discussion with Experts

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Product Management Director, Oracle VM
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Shores, CA 94065, United States

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Redmond magazine
Sent: Wed 6/14/2017 3:07:06 PM
Subject: Michael -Access Your Digital Edition Today!

****2nd Notice****

Dear Michael,

Here at REDMOND Magazine, we understand that your time is valuable so we decided to take this opportunity to highlight some of the top stories from the most recent issue which you have yet to access.

To view, please click on the link below the issue:

===== JUNE 2017 =====

<http://1105insight.com/portal/wts/ucmcmQecEeaqmtqdjFehj7zjh>

In this issue:

- Build Intelligence With MS Graph API to Access All Data In the MS Cloud
- Handle More Tasks With SCCM 2016 Version 1702
- Protect Office 365 From Ransomware
- What's next For Windows?
- Foley: Why Did Microsoft Build a Surface Laptop?

===== MAY 2017 =====

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In this issue:

- A New Windows Dimension: Windows 10 Creators Update Aims to Please And Ratchets Forward the Universal Windows Platform
- Microsoft's Achilles' Heel: UWP
- Connect Azure AD to Office 365
- How To Pick the Right MSP
- Foley: Does Everyone Still Need Windows?

Click on the link and read a story now, or download the issue to read later at your convenience. Either way, we hope you will find the time to peruse these headlines and take advantage of your digital subscription status.

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1105 Media, Inc., 9201 Oakdale Avenue, Suite 101, Chatsworth, CA 91311

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Granicus
Sent: Wed 6/14/2017 3:04:41 PM
Subject: Level up

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July 12, 2017 | 8:30 - 10:30 AM

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Art M.Loureiro
Sent: Wed 6/14/2017 1:56:08 PM
Subject: [Official Program Release] Integrated Air and Missile Defense

SEPTEMBER 28-30 | WASHINGTON D.C. | AIRMISSILEDEFENSEEVENT.IQPC.COM

Good Morning,

While advanced global threats continue to grow, now is the time for investment in advanced sensor, interceptor and C-UAS technology in order to get ahead of the curve in IAMD.

With that in mind, we are proud to release the [official brochure](#) for the 3rd Integrated Air and Missile Defense Summit, taking place this September in Washington D.C. Don't miss the opportunity to meet with industry leaders, decision makers and military personnel in an effort to discuss, develop and help shape the future of our missile and defense operations.

[View the Agenda](#) | [Request an Emailed Copy](#)

Discussion topics include:

- How IAMD Supports the Services in Multi-Domain Operations / Battle Concept
- Challenges and Opportunities for Multi-Domain IAMD
- Air Force Multi-Domain Command and Control and Implications for IAMD Missions
- Addressing Space and Cyberspace Threats and Challenges to IAMD

[Take a look here](#) at who attended our previous summits, and who you will have the chance to engage with at this year's event.

Early Confirmed Speakers Include:

View the official introduction letter describing our goals for the event [here](#).

Looking forward to seeing you in Washington D.C.

COL (R) Art Loureiro
Chairman, IAMD 2017

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Daniel Smallwood
Sent: Wed 6/14/2017 1:31:15 PM
Subject: Measuring the ROI of Knowledge Management

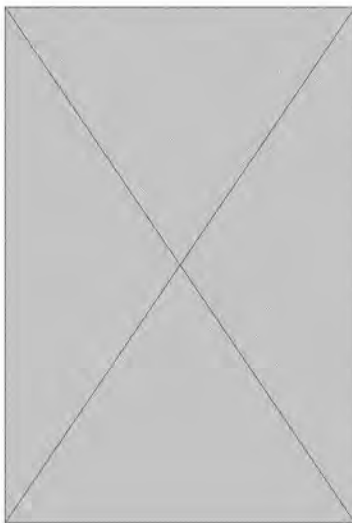
The step-by-step guide to proving the value of KM efforts | [Forward to your colleagues](#) | [webversion](#)

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Measuring the ROI of Knowledge Management 2nd edition

Featuring Stan Garfield, John Hovell, Helene Russell, Dave Snowden, and many more...

Order copy/copies today and save \$100...



"The measurement of knowledge value is difficult. It is specific to time, context, and the perception of what it is that constitutes a knowledge asset"

David Griffiths, founder, K3-Cubed Limited

KM has been accepted as an integral practice for most organizations - however many are still, understandably, cautious of the investments they make in the current financial environment following the economic downturn.

[Read More](#)

Overview:

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: EPA Asthma Program
Sent: Thur 6/15/2017 6:01:12 PM
Subject: June AsthmaCommunityNetwork.org Newsletter

[Add us](#) to your address book!

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Raising Asthma Awareness Year-Round!

Build on the momentum generated during Asthma Awareness Month (AAM) to engage your community in asthma awareness activities throughout the year.

Use AsthmaCommunityNetwork.org as a platform to spread awareness about your program's activities and to connect with other asthma programs across the nation. Share your innovative tools in the [Resource Bank](#) and add your program's upcoming events to the [Events Calendar](#).

Materials From Recent Webinars Now Available

[Winning Strategies From Coast to Coast:
How EPA's 2017 Asthma Award Winners
Are Addressing Asthma Disparities](#)

View materials from the webinar [Winning Strategies From Coast to Coast: How EPA's 2017 Asthma Award Winners Are Addressing Asthma Disparities](#), which was held on May 16, 2017. Hear successful strategies for providing comprehensive asthma care and working to streamline the treatment and management of asthma.

View the Q&A from the webinar in the [Discussion Forum](#).

[Health Plan Strategies for Managing Asthma:](#)

Our Network Today

Total Programs: **1,104**

Total Users: **4,202**

Not a Member? [Join Today!](#)

From the Resource Bank

[A Cost-Benefit Analysis
of a State-Funded Healthy
Homes Program for
Residents With Asthma:
Findings From the
New York State Healthy
Neighborhoods Program
New York State Healthy
Neighborhoods Program](#)

[An Evaluation of a State-
Funded Healthy Homes
Intervention on Asthma
Outcomes in Adults and
Children
New York State Healthy
Neighborhoods Program](#)

[The New York State
Healthy Neighborhoods
Program: Findings From
an Evaluation of a Large-
Scale, Multisite, State-
Funded Healthy Homes
Program
New York State Healthy
Neighborhoods Program](#)

Key Findings From AHIP's Asthma Assessment

Learn about key findings from America's Health Insurance Plans' (AHIP's) Asthma Assessment in the webinar Health Plan Strategies for Managing Asthma: Key Findings From AHIP's Asthma Assessment, which aired on May 23, 2017. Learn how the EPA's collaborative agreement with AHIP is working to support communities to deliver sustainable in-home environmental asthma interventions.

Healthy Home Evaluator Certification

The Healthy Home Evaluator (HHE) certification for home performance and energy efficiency professionals builds on other Building Performance Institute (BPI) certifications. The HHE certification was developed in partnership with the Green & Healthy Homes Initiative. An HHE assesses home-based environmental health and safety hazards and provides the homeowner with a prioritized list of recommendations to address those hazards.

Home contractors who want to learn about becoming an HHE can visit bpi.org/certified-professionals/healthy-home-evaluator.

Homeowners who want to find a local HHE can visit bpi.org/locator-tool.

National Center for Healthy Housing Debuts New Technical Assistance Platform to Expand Home-Based Asthma Services

Building Systems to Sustain Home-Based Asthma Services is a new eLearning and technical assistance platform designed to equip staff in public health agencies, state asthma-control programs, state Medicaid agencies, and other housing and health organizations with information about how to build the systems, infrastructure and financing to put home-based asthma services in place in their own states, communities or

regions. A collection of 10 free eLearning modules and technical assistance tools from a team of experts and partners led by the National Center for Healthy Housing, with funding from the U.S. Environmental Protection Agency, combine to maximize opportunities to launch and grow large-scale, evidence-based, sustainable asthma home visiting programs.

Visit

nchh.org/Program/EquippingStatesforReimbursement.aspx to learn more.

[Email us](#) or [provide feedback](#) online through the Network!

[Asthma in Children
Infographic: Symptoms,
Triggers and Treatments](#)
Home Clean Expert

[Strategies for Addressing
Asthma in Schools](#)
*U.S. Centers for Disease
Control and Prevention*

[Instituting Smoke-Free
Public Housing: A Rule
by the](#)
*U.S. Department of Housing
and Urban Development*
*U.S. Department of
Housing and Urban
Development*

[Evidence Points to Fish
Oil to Fight Asthma](#)
*University of Rochester
Medical Center*

[Childhood Asthma May
Encourage Obesity](#)
Z. Chen, et al.

[Summary of the 2016
National Asthma
Leadership Roundtable](#)
*America's Health
Insurance Plans*

Upcoming Events

[Webinar: A
Comprehensive Look Into
Nationwide Medicaid
Coverage and Barriers of
Guidelines-Based Asthma
Care](#)
June 28, 2017

Association of Asthma
Educators (AAE)
Conference: "Unraveling
the Complexities of
Asthma Education"

July 28, 2017

Milwaukee, WI

Hosting an asthma event?

Post it
to AsthmaCommunityNetwork
and share it with our
community!



Know someone who
might be interested in
joining

AsthmaCommunityNetwork.o

Help us spread the word!

This message was intended for: flynn.mike@epa.gov

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To: Lisa Casias[lcasias@doc.gov]; 'Denise.carter@ed.gov'[Denise.carter@ed.gov]; Vincent Micone[Vincent.Micone@HQ.DHS.GOV]; 'David.eagles@hud.gov'[David.eagles@hud.gov]; 'Johnson.Dennis.R@dol.gov'[Johnson.Dennis.R@dol.gov]; 'scott_cameron@ios.doi.gov'[scott_cameron@ios.doi.gov]; 'Kathryn.Malague@treasury.gov'[Kathryn.Malague@treasury.gov]; 'Anne.Audet@dot.gov'[Anne.Audet@dot.gov]; 'Shana.Love-Holmon@va.gov'[Shana.Love-Holmon@va.gov]; 'Jodene.Fitzpatrick@va.gov'[Jodene.Fitzpatrick@va.gov]; Flynn, Mike[Flynn.Mike@epa.gov]; 'Eric.Jones@sba.gov'[Eric.Jones@sba.gov]; 'Lauren.stocker@pic.gov'[Lauren.stocker@pic.gov]; 'emily.mcbride@gsa.gov'[emily.mcbride@gsa.gov]; 'doug.comstock@nasa.gov'[doug.comstock@nasa.gov]; 'Jo.Tittel@ssa.gov'[Jo.Tittel@ssa.gov]; 'josie.beets@gsa.gov'[josie.beets@gsa.gov]; Ellen Herbst[eherbst@doc.gov]; 'john.bardis@hhs.gov'[john.bardis@hhs.gov]; 'jon.cordova@hhs.gov'[jon.cordova@hhs.gov]; 'chip.fulghum@hq.dhs.gov'[chip.fulghum@hq.dhs.gov]
Cc: Springer, Linda M. EOP/OMB; Ex. 6 - Personal Privacy; Brown, Dustin S. EOP/OMB; Ex. 6 - Personal Privacy; Mirza, Asma Y. EOP/OMB; Ex. 6 - Personal Privacy; Sondra Kahawaii[SKahawaii@ourpublicservice.org]
From: Tina Sung
Sent: Thur 6/15/2017 5:31:55 PM
Subject: Thank you for joining us! HHS Slides attached
[HHS Presentation 6-12-17.pdf](#)

Good afternoon,

Thank you for joining us on Monday June 12 to discuss implementation of the Reorg EO.

I hope that you found the conversation valuable, and that you were able to glean insights and ideas to take back to your respective agencies. Several of you requested the slides that John Bardis and Jon Cordova shared during their remarks. Please find them attached.

Many of you also mentioned the benefit of being able to come together to share and learn from one another, and we are considering additional roundtables focused on the questions that you raised during the session—if we pursue those, we will certainly let you know.

Since shared services came up several times as a key theme and area of focus, I want to make you aware of an event that the Partnership will be hosting later this month, **June 23rd from 8:00 to 10:30 a.m.**, for agency leaders on this important topic.

Business Enterprise Services: Lessons Learned from Fortune 500 Companies

The President's reform and reorganization initiative calls on agency leaders to improve efficiency, effectiveness, and accountability by critically examining current practices and proposing new ways of operating. For decades, Fortune 500 companies have demonstrated the power of business enterprise services to drive efficiency and effectiveness, while providing returns to shareholders.

In an effort to identify opportunities for similar returns in the federal sector, the Partnership for Public Service is hosting an event on **June 23rd from 8:00 to 10:30 a.m.** for agency leaders to learn about business enterprise services from leading private sector companies. Our focus will be on cost savings and avoidance, impact on the workforce and the need for reskilling and job changes, risk, and key lessons learned that might inform how federal agencies should move forward. For more information and to register, please email Lindsay Laferriere at llaferriere@ourpublicservice.org.

As always, thank you for your service. Please let us know how we might be able to continue to support you and your efforts.

Warm regards,

Tina

To: Flynn, Mike[Flynn.Mike@epa.gov]; Anderson, Denise[anderson.denise@epa.gov]
From: Tamika Burton
Sent: Thur 6/15/2017 2:33:33 PM
Subject: Tamika Out of the office today

Gm, **Ex. 6 - Personal Privacy** I will not be in
today and will return tomorrow.

Sent from my iPhone

From: Keogh, Becky
Location: Teleconference
Importance: Normal
Subject: Accepted: EELC August Teleconference
Start Date/Time: Thur 8/10/2017 6:00:00 PM
End Date/Time: Thur 8/10/2017 8:00:00 PM

From: Keogh, Becky
Location: Teleconference
Importance: Normal
Subject: Accepted: EELC July Teleconference
Start Date/Time: Thur 7/6/2017 6:00:00 PM
End Date/Time: Thur 7/6/2017 8:00:00 PM

From: Sarah Abramowitz
Sent: Tue 6/6/2017 6:42:36 PM
Subject: Thank you for attending EN2017!

EN2017 Attendees:

Thank you so much for attending the 2017 Exchange Network National Meeting in Philadelphia!

Meeting Survey

On behalf of the EN2017 Program Committee, I would like to request that you take 10 minutes to respond to a brief survey. Your feedback is valuable and will help ensure that we provide the best experience possible at future meetings. We appreciate any input that you have to offer!

<https://www.surveymonkey.com/r/K9RZ2ZK>

Videos and Presentations Now Available

Video recordings and slide presentations from the meeting are now available for viewing on the [EN2017 webpage](#). Some highlights include the [opening general session](#) with ECOS Vice President Todd Parfitt's presentation on Building a Results-Oriented Organization, which is followed by ECOS Executive Director Alex Dunn's panel on Communicating Our Success in Environmental Management. The morning concludes with a state panel discussion on Using E-Business Technology to Drive Improvements in Environmental Management.

Program staff will be interested in the dozens of Exchange Network and E-Enterprise for the Environment-supported projects covered in the concurrent sessions. The latest information is now available on topics including: [CAER](#); [Advanced Monitoring](#); [Identity Management](#); [Efficiencies in Regulatory Programs](#), including [e-Manifest](#); [facility data](#); [mobile applications](#); and many more. Take advantage of these free educational opportunities and share them with your colleagues. For any follow up, or to contact any presenters, please email [Eddie Ortiz](#).

Thank you.

Sarah

Sarah Abramowitz | Research Associate
Ross Strategic | 1218 3rd Ave, Suite 1207, Seattle WA 98101
Desk: 206.792.4032
sabramowitz@rossstrategic.com | <http://rossstrategic.com>

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Austin Fageol
Sent: Tue 6/6/2017 5:46:28 PM
Subject: Summer budget review

Mike—

The FY 19 budget reviews are emphasizing the use of performance measures and data analytics to justify all requests. To prepare your program for these mandates the Performance Institute is hosting three forums in the coming weeks that you can attend in person OR remotely by webinar:

Data Analytics for Government (June 20-21)
Performance Budgeting (June 22-23)
Using Benchmarks in Government (June 26-27)

We have recently received sponsorship for these programs so we can offer several discount passes. Attendees may be able to receive CPE and PDU credits.

Would you be interested in seeing the full agendas and attending?

-Austin

Austin Fageol
Director, Outreach
[The Performance Institute](#)

You're receiving this email because you're a past participant in Performance Institute events or a public official. This email was sent to flynn.mike@epa.gov.

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1440 G St NW

Washington, DC - DISTRICT OF COLUMBIA 20005

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Chris Johnson
Sent: Tue 6/13/2017 12:02:07 PM
Subject: RE: RE: Meeting Availability

Hi Mike,

I am following up on the email below that I sent you a few weeks ago. Would you have 10 minutes for a call in the coming weeks?

Best Regards,

Chris Johnson
General Manager
(843) 971-8499
Chris.johnson@2oceanspromotions.com
www.2oceanspromotions.com

Offices in Charleston, SC, Washington DC, Augusta GA, Atlanta GA

-----Original Message-----

From: Chris Johnson[mailto:chris.johnson@2oceanspromotions.com]
Sent: Wednesday, May 31, 2017 8:00 AM
To: Mike Flynn flynn.mike@epa.gov
Subject: Meeting Availability

Hi Mike,

Business professionals tell me they are too busy and it takes too much time to browse catalogues and websites to find promotional products, branded merchandise and apparel to use at shows, events and reward employees or thank customers.

We understand that you require on-brand, in-demand promotional products and apparel that your customers, prospects and employees will USE and REMEMBER. With more than 25 years of combined industry experience helping a wide range of businesses from Fortune 50 corporations to local schools and startups, we will lower your spend, simplify the process and ensure on time arrival.

Do you have 10 minutes in the upcoming weeks?

Best regards,

Chris Johnson
General Manager
(843) 971-8499

Chris.johnson@2oceanspromotions.com
www.2oceanspromotions.com

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Chris Johnson
Sent: Tue 6/6/2017 12:02:12 PM
Subject: RE: Meeting Availability

Hi Mike,

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Best Regards,

Chris Johnson
General Manager
(843) 971-8499
Chris.johnson@2oceanspromotions.com
www.2oceanspromotions.com

Offices in Charleston, SC, Washington DC, Augusta GA, Atlanta GA

-----Original Message-----

From: Chris Johnson[mailto:chris.johnson@2oceanspromotions.com]
Sent: Wednesday, May 31, 2017 8:00 AM
To: Mike Flynn flynn.mike@epa.gov
Subject: Meeting Availability

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We understand that you require on-brand, in-demand promotional products and apparel that your customers, prospects and employees will USE and REMEMBER. With more than 25 years of combined industry experience helping a wide range of businesses from Fortune 50 corporations to local schools and startups, we will lower your spend, simplify the process and ensure on time arrival.

Do you have 10 minutes in the upcoming weeks?

Best regards,

Chris Johnson
General Manager
(843) 971-8499

Chris.johnson@2oceanspromotions.com
www.2oceanspromotions.com

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From: Michelle Amante
Sent: Mon 6/12/2017 5:43:40 PM
Subject: Contact Information from this morning's meeting at the Partnership

Thank you for a robust conversation this morning (Scott, we missed you!). A few of you asked for one another's contact information. I'm sharing email addresses so you can continue the great dialogue between your agencies.

I hope to connect with you all again soon.

Best,

Michelle Amante

Director of Agency Outreach and Business Development

Partnership for Public Service

1100 New York Ave NW

Suite 200 East

Washington, DC 20005

mamante@ourpublicservice.org

(202) 775-2742

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We help federal agencies deliver results by improving their management and strengthening their leadership capacity. Learn more about our open programs and upcoming events at <https://ourpublicservice.org/calendar>.

To: Tina Sung[tsung@ourpublicservice.org]
Cc: Sondra Kahawaii[SKahawaii@ourpublicservice.org]
From: Tina Sung
Sent: Fri 6/9/2017 6:41:03 PM
Subject: Reminder – Join us on Monday, 6/12 for Reorg EO event - agenda attached
June12 Event Agenda.docx

Good afternoon,

We look forward to seeing you at the Partnership for Public Service on **Monday, June 12** to discuss how agencies are approaching the task of identifying ideas to reduce duplication, overlap, fragmentation, and obsolescence in program, function, geography, and interdepartmental areas. **Please arrive by 8:00 a.m. to check in**, enjoy breakfast, and network with your fellow PMC members and representatives. We will kick off the session promptly at 8:30 a.m. and wrap up by 11:00 a.m., as outlined in the attached agenda. Please read GAO's report on duplication, and the prompt questions on page two of the agenda.

During this event, three departments—HHS, DOC and DHS—will present their approaches, each of which is different, but impactful, and will hopefully generate ideas for other actions.

The Partnership is located one block from Metro Center at 1100 New York Avenue NW, Suite 200 East. Please click here for directions to our office. We are sensitive to the ethical considerations associated with government employees attending events. Accordingly, we encourage you to check with your ethics official to determine the proper application of ethics compliance. We will offer a light breakfast at our session. The total cost is \$9 per person. If you need to pay, we accept cash, all major credit cards and checks made payable to “The Partnership for Public Service.”

Should you have any questions about the event or if you are no longer able to attend, please email me or Sondra Kahawaii at skahawaii@ourpublicservice.org as soon as possible.

Warmest regards,

Tina

The Partnership for Public Service is a nonpartisan, nonprofit that strives for a more effective government for the American people. To learn more, please visit ourpublicservice.org.



REORGANIZATION EXECUTIVE ORDER

REDUCING DUPLICATION, OVERLAP, FRAGMENTATION, AND OBSOLESCENCE

SESSION DETAILS

Monday, June 12, 2017 from 8:00 to 11:00 a.m. at the Partnership for Public Service (1100 New York Avenue NW, Suite 200 East, Washington, DC 20005)

PURPOSE

- Hear how PMC peers are approaching the task of identifying ideas to reduce duplication, overlap, fragmentation, and obsolescence in these areas: programs, functions, geography and interdepartmental
- Each CFO Act agency will share their preliminary list of most compelling ideas to reduce duplication
- Dialogue on obvious overlaps within and across departments
- Agree on next steps

Time	Agenda
8:00 a.m.	Registration and Networking Light breakfast provided.
8:30 a.m.	Welcome and Opening Remarks
8:35 a.m.	OMB Context – Dustin Brown
8:45 a.m.	Panel Discussion: Three Exemplars – HHS, DOC and DHS Prompts <ul style="list-style-type: none">• How did you approach identifying ideas to reduce duplication, overlap, fragmentation, and obsolescence in each of these categories: program, function, geography, and interdepartmental?• How are you structuring the effort (team size, representation, rhythm, and governance/decision-making)?• What evidence and criteria are you using to identify top ideas (e.g., customer, financial, operational, and benchmark data)?• How did you engage your workforce and key stakeholders?• Challenges? Risks? Mitigation strategies? Advice to colleagues?
9:15 a.m.	Break-Out Groups (break included) <ul style="list-style-type: none">• Agency representatives will share their top three to five most compelling ideas.• Discuss the question prompts outlined on page two.• Seek advice from each other on how to address challenges and the best ways to move forward. OMB representatives will be at each table to listen to the ideas.• Pre-read: GAO's 2017 Report on Duplication (https://www.gao.gov/duplication/overview)
10:30 a.m.	Report Out and Dialogue with OMB <ul style="list-style-type: none">• Report out with top ideas, overlaps, and areas where we can work together or need OMB support.• Next steps.• Closing Remarks – Linda Springer

BREAK-OUT GROUP QUESTION PROMPTS

Inter-agency Coordination

- In developing your plans in response to M-17-22, to what extent has your agency leveraged the CXO councils and other inter-agency forums? Are you developing joint proposals with other agencies?
- Are you using the GPRA process for identifying priorities in developing plans under M-17-22? For example, agency and cross-agency priority goals.
- On a scale of 1 to 10, with 10 being the highest impact, how big of an impact can your agency have in implementing your M-17-22 plans without significant action taken by another agency (e.g., moving programs or offices from one agency to another, acting jointly with other agencies on shared services)?
- What efforts are you making to analyze your agency's regional presence and determine whether there are opportunities to co-locate regional offices with other agencies?
- In its report on duplication, fragmentation and overlap, GAO identifies strategic sourcing and IT modernization as one of the biggest opportunities for potential savings across the government. What are the biggest barriers to your agency making greater use of strategic sourcing?

Other Stakeholders

- What processes have you used to solicit input from citizens, the private sector and other non-governmental stakeholder groups? From state and local governments?
- What processes are you using for employee engagement?

Overall Process

- What are the biggest obstacles your agency faces in addressing the duplication, overlap, fragmentation and obsolescence identified by GAO in your agency's jurisdiction?
- What kind of cost-benefit analysis are you using as you develop your plans?

Cc: Kristien Knapp Ex. 6 - Personal Privacy
To: Luseni Pieh Ex. 6 - Personal Privacy
From: Luseni Pieh
Sent: Fri 6/9/2017 6:11:04 PM
Subject: Happy Hour & Send-off for Stan!!

Hi everyone -

I hope you're well! As we move into summer, I thought it would be the perfect time to schedule an EPA happy hour. And, it's a great opportunity to say goodbye to our good friend Stan Meiburg as he leaves DC! See below for details.

Date: Thursday, June 22nd

Time: 5:00pm - 8:30pm

Where: Dirty Habit, 555 8th St NW, Washington, DC 20004 (<http://www.dirtyhabitdc.com>)

Hope to see as many of you as possible! We'll grab some space in the courtyard. Feel free to share with others that may be interested in joining.

Best,

Lou

To: Vizian, Donna[Vizian.Donna@epa.gov]; Flynn, Mike[Flynn.Mike@epa.gov]
Cc: Tina Sung[tsung@ourpublicservice.org]
From: Sondra Kahawaii
Sent: Thur 6/8/2017 8:31:59 PM
Subject: RE: PMC Reform EO meeting - EPA Rep
OMB PMC Agenda ASAM 6-7-17.docx

Hi Donna and Mike,

To follow up on the note to Tina, below, I included details for the event on June 12 regarding the reorganization executive order—reducing duplication, overlap, fragmentation, and obsolescence.

Below are logistical details and I attached the agenda for the session:

- ☐ Date and Time: Monday, June 12 from 8:00 to 11:00 a.m.
- ☐ Location: Partnership for Public Service (1100 New York Avenue NW, Suite 200 East, Washington, DC 20005)
- ☐ Purpose:
 - Hear how PMC Council peers are approaching the task of identifying ideas to reduce duplication in these areas: programs, functions, geography and interdepartmental
 - Each CFO Act agency will share their preliminary list of most compelling ideas to reduce duplication
 - Dialogue on obvious overlaps within and across departments
 - Agree on next steps

We look forward to having Mike join us! Please let me know if you have questions or need anything else.

Very best,

Sondra

Sondra Kahawaii, Esq.

Manager

Government Transformation and Agency Partnerships

Partnership for Public Service

1100 New York Ave NW

Suite 200 East

Washington, DC 20005

Ex. 6 - Personal Privacy (direct)

<http://ourpublicservice.org>

From: Vizian, Donna [<mailto:Vizian.Donna@epa.gov>]

Sent: Thursday, June 8, 2017 2:32 PM

To: Colleen Rasa <CRasa@ourpublicservice.org>; Tina Sung <tsung@ourpublicservice.org>

Subject: PMC Reform EO meeting

Hi Tina and Coleen,

Good to see you today and sorry to run out at the end. I have a 10 with OIG on some Thursdays and today was one of them.

My Acting Deputy Administrator will be attending on Monday, but he can't locate the invite. Can you send it to me (or resend to him – Flynn.mike@epa.gov).

Thanks

Donna



REORGANIZATION EXECUTIVE ORDER

REDUCING DUPLICATION, OVERLAP, FRAGMENTATION, AND OBSOLESCENCE

SESSION DETAILS

Monday, June 12, 2017 from 8:00 to 11:00 a.m. at the Partnership for Public Service (1100 New York Avenue NW, Suite 200 East, Washington, DC 20005)

PURPOSE

- Hear how PMC Council peers are approaching the task of identifying ideas to reduce duplication in these areas: programs, functions, geography and interdepartmental
- Each CFO Act agency will share their preliminary list of most compelling ideas to reduce duplication
- Dialogue on obvious overlaps within and across departments
- Agree on next steps

Time	Agenda
8:00 a.m.	Registration and Networking Light breakfast provided.
8:30 a.m.	Welcome and Opening Remarks
8:35 a.m.	OMB Context – Dustin Brown
8:45 a.m.	Panel Discussion – Three Exemplars HHS, DHS, and DOC <ul style="list-style-type: none">• How did you approach identifying ideas to reduce duplication, overlap, fragmentation, and obsolescence in each of these categories: program, function, geography, and interdepartmental?• How are you structuring the effort (team size, representation, rhythm, and governance/decision-making)?• What evidence and criteria are you using to identify top ideas (e.g., customer, financial, operational, and benchmark data)?• How did you engage your workforce and key stakeholders?• Challenges? Risks? Mitigation strategies? Advice to colleagues?
9:15 a.m.	Break-Out Groups (break included) <ul style="list-style-type: none">• Agency representatives will share their top three to five most compelling ideas to reduce duplication, overlap, fragmentation and obsolescence and seek advice from each other on how to address challenges and the best ways to move forward. OMB representatives will be at each table to listen to the ideas.• Pre-read: GAO's 2017 Report on Duplication (https://www.gao.gov/duplication/overview)
10:30 a.m.	Report Out and Dialogue with OMB <ul style="list-style-type: none">• Report out with top ideas, overlaps, and areas where we can work together or need OMB support.• Next steps.• Closing Remarks – Linda Springer

11:00 a.m.	Adjourn
---------------	---------

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: Austin Fageol
Sent: Thur 6/8/2017 7:00:32 PM
Subject: FW: Summer budget review

Mike —

Checking back in with you — will we see you at one of our upcoming forums to help you through your budget reviews? With the requirement to engage performance measures and data analytics to justify all requests, these forums will be very useful.

Can I get you a brochure for one of them? As I mentioned, we have several discount passes available.

Thanks,

—Austin Fageol

From: Austin Fageol
Subject: FW: Summer budget review
Date: Tuesday, June 6, 2017

Mike—

The FY 19 budget reviews are emphasizing the use of performance measures and data analytics to justify all requests. To prepare your program for these mandates the Performance Institute is hosting three forums in the coming weeks that you can attend in person OR remotely by webinar:

Data Analytics for Government (June 20-21)
Performance Budgeting (June 22-23)
Using Benchmarks in Government (June 26-27)

We have recently received sponsorship for these programs so we can offer several discount passes. Attendees may be able to receive CPE and PDU credits.

Would you be interested in seeing the full agendas and attending?

-Austin

Austin Fageol
Director, Outreach
The Performance Institute

You're receiving this email because you're a past participant in Performance Institute events or a public official. This email was sent to flynn.mike@epa.gov.

Our mailing address is:

Performance Institute, LLC

1440 G St NW

Washington, DC - DISTRICT OF COLUMBIA 20005

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To: Flynn, Mike[Flynn.Mike@epa.gov]
From: EPA Healthy Indoor Air
Sent: Fri 6/2/2017 7:30:49 PM
Subject: June Is National Healthy Homes Month

Having trouble viewing this email? [View it as a Web page.](#)

Correction: Yesterday's message about National Healthy Homes Month contained errors.

We apologize for the errors and any confusion they may have caused.

June Is National Healthy Homes Month

June is National Healthy Homes Month—the perfect time to remember that a healthy home includes healthy air. Why air? Because the air inside your home can contain harmful pollutants that put you and your family at risk. Keep in mind that health effects resulting from poor indoor air quality (IAQ) can be experienced soon after exposure or sometimes not until years later. Improving your home's indoor air quality is important to your health and the health of your loved ones.

The U.S. Department of Housing and Urban Development (HUD)'s theme for this year's National Healthy Homes Month is *Just What the Doctor Ordered*. The quality of your indoor air is an important factor of healthy living. Recognizing that people spend most of their time inside, National Healthy Homes Month introduces concepts and tips for keeping homes healthy and safe.

EPA's [Indoor Environments Division](#) shares HUD's vision for healthy homes nationwide: Healthy homes need healthy indoor air. These three strategies will help you improve your home's IAQ:

1. [Source Control](#)—Stop pollutants where they start. For example, adjust emissions from gas stoves and eliminate sources of mold and moisture.
2. [Improved Ventilation](#)—Turn on kitchen fans when cooking and bathroom fans when showering.
3. [Air Filters](#)—Change the filter on your heating/cooling system as recommended by the manufacturer.

Improve your home's air quality by [using "green" cleaning products](#), [not smoking indoors](#), [having your home tested for radon](#), or [upgrading your heating and cooling systems to be more energy efficient and cleaner](#), among other steps.

Celebrate National Healthy Homes Month with EPA's Indoor Environments Division and HUD! Follow the links below to resources that can help you improve your home's IAQ:

- HUD: [National Healthy Homes Planning Guide](#)
- EPA: [Protect the IAQ in Your Home: What You Can Do Now](#)

- EPA: [Home Remodels and Energy Upgrades](#)
- EPA: [Interactive Mold House Tour](#)

This message was intended for: flynn.mike@epa.gov

To update your subscriptions, modify your password, or to unsubscribe click [here](#).

If you have questions or problems with the subscription service, please visit insights.govdelivery.com.

To view EPA's privacy and security notice, please click [here](#).

This service is provided to you at no charge by the [EPA Indoor Environments Division](#).

This email was sent to flynn.mike@epa.gov using GovDelivery, on behalf of: EPA Indoor Environments Division • 1200
Pennsylvania Avenue NW • Washington, DC 20460



From: Kristen Durance
Location: Ex. 6 - Personal Privacy
Importance: High
Subject: Canceled: EEEEC Teleconference (every 4 weeks)
Start Date/Time: Fri 6/2/2017 6:00:00 PM
End Date/Time: Fri 6/2/2017 7:00:00 PM

.....
2522

Kristen Durance
Ross Strategic | 1218 3rd Ave, Suite 1207, Seattle WA 98101
Phone: 206.792.4050
kdurance@rossstrategic.com | <http://www.rossstrategic.com>

To: Kristen Durance[kdurance@rossstrategic.com];
andrew.putnam@state.co.us[andrew.putnam@state.co.us]; Flynn, Mike[Flynn.Mike@epa.gov]; Chu,
Ed[Chu.Ed@epa.gov]; Fine, Steven[fine.steven@epa.gov]; Battin, Andrew[Battin.Andrew@epa.gov];
chris.simmers@des.nh.gov[chris.simmers@des.nh.gov];
brandy.valdezmurphy@state.co.us[brandy.valdezmurphy@state.co.us];
bgraves@ecos.org[bgraves@ecos.org]; Hull, Beri[hull.beri@epa.gov]; Burton,
Tamika[burton.tamika@epa.gov]; Harbour, Shana[Harbour.Shana@epa.gov]; Leopard,
Matthew[Leopard.Matthew@epa.gov]; Anderson, Denise[anderson.denise@epa.gov]; Jones,
Doug[jones.doug@epa.gov]; Cacho, Julia[Cacho.Julia@epa.gov]; Peters, Dana[Peters.Dana@epa.gov];
michele.clarizio@state.mn.us[michele.clarizio@state.mn.us];
michelle.beeman@state.mn.us[michelle.beeman@state.mn.us]; Bednar,
Georgia[bednar.georgia@epa.gov]; todd.parfitt@wyo.gov[todd.parfitt@wyo.gov];
connie.osborne@wyo.gov[connie.osborne@wyo.gov]; Sarah
Abramowitz[sabramowitz@rossstrategic.com]; memarthla@sctibe.com[memarthla@sctibe.com];
lydia.scheer@nau.edu[lydia.scheer@nau.edu]; Comer, Lisa[Comer.Lisa@epa.gov]; Lesley J.
LaPerle[laperle@sheehan.com]; tburack@sheehan.com[tburack@sheehan.com]; Letson,
Laura[letson.laura@epa.gov]; Dana Stefan[dstefan@rossstrategic.com]
Cc: Curtis, Mary[Curtis.Mary@epa.gov]; Eddie Ortiz[eortiz@ecos.org]; Simmers,
Chris[Chris.Simmers@doit.nh.gov]
From: Robert Willis
Sent: Thur 6/1/2017 8:16:46 PM
Subject: Cancelled EEEC Teleconference & EELC Priorities Document for your Review
[E-Enterprise - EELC 2017-2018 Work Plan - 5.31.17 Redline.docx](#)
[E-Enterprise - EELC 2017-2018 Work Plan - 5.31.17 clean.docx](#)

Hello Executive Committee,

We are cancelling our monthly EEEC call. Our next call is scheduled for June 30th.

Attached to this email are a clean and redline version of the updated EELC Priorities document. The changes to this document should reflect the conversation with the EELC. A few notes and places where we need feedback:

1. **Inclusion of a priority area d. per the suggestion of Lisa Gover:** On the EELC call we did not conclude on what to do with the suggested new priority language. My read from the call was that the suggested language was too broad/definitive and didn't reflect an appropriate type of priority for the EELC. However; at the heart of the suggestion was a need to explore how E-Enterprise can support capacity building. Not wanting to lose that idea, a proposed additional priority area could be something like: "Identify needs for and support to states, tribes, and EPA to modernize environmental infrastructure systems to improve regulated community business transaction interactions and to improve and make more timely data collection and decision-making capabilities." Having this as a priority would imply that the EELC set up a small scoping team to explore what opportunities do exist for EELC to support capacity building consistent with E-Enterprise.
2. **Inclusion of the term "Cooperative Federalism":** The EELC seemed split on whether to include this term or not. In the attached draft, we provide an option for that opening sentence without that term.

Please let me know what you think on the attached documents by COB next Thursday 6/8 (or before). As always please don't hesitate to reach out if you have any questions or thoughts.

r

Rob Willis | Principal

Ross Strategic | 1218 3rd Ave, Suite 1207, Seattle WA 98101

Desk: 206.792.4082 | Cell: 206.295.2435

rwillis@rossstrategic.com | <http://rossstrategic.com>

-----Original Appointment-----

From: Kristen Durance

Sent: Thursday, January 12, 2017 9:22 AM

To: Kristen Durance; andrew.putnam@state.co.us; Flynn.Mike@epa.gov; chu.ed@epa.gov; fine.steven@epa.gov; battin.andrew@epa.gov; chris.simmers@des.nh.gov; brandy.valdezmurphy@state.co.us; bgraves@ecos.org; hull.beri@epa.gov; burton.tamika@epa.gov; harbour.shana@epa.gov; leopard.matthew@epa.gov; anderson.denise@epa.gov; jones.doug@epa.gov; Cacho.Julia@epa.gov; Peters.Dana@epa.gov; michele.clarizio@state.mn.us; michelle.beeman@state.mn.us; bednar.georgia@epa.gov; todd.parfitt@wyo.gov; connie.osborne@wyo.gov; Robert Willis; Sarah Abramowitz; memarthla@sctribe.com; lydia scheer (ITEP); Comer, Lisa; Lesley J. LaPerle; Thomas S. Burack; Letson, Laura; Dana Stefan

Cc: Curtis, Mary; eortiz@ecos.org; Simmers, Chris

Subject: EEEEC Teleconference (every 4 weeks)

When: Friday, June 2, 2017 11:00 AM-12:00 PM (UTC-08:00) Pacific Time (US & Canada).

Where: (888) 326-7492; 57761271#

Hi all,

The E-Enterprise Executive Committee (EEEC) will continue to meet every four weeks through 2017. Please let me know if you have any questions about these calls or need to add staff to the invite.

Logistics:

Call-in: Ex. 6 - Personal Privacy

Passcode: Ex. 6 - Personal Privacy

Thanks and Happy New Year!

K

Kristen Durance

Ross Strategic | 1218 3rd Ave, Suite 1207, Seattle WA 98101

Phone: 206.792.4050

kdurance@rossstrategic.com | <http://www.rossstrategic.com>

E-Enterprise Leadership Council 2017-2018 Work Plan

V05.31.2017

E-Enterprise for the Environment puts into practice “Cooperative Federalism” among states, territories, Tribes, and U.S. EPA to accelerate the collaborative development, implementation, and improvement of environmental and public health protection programs. E-Enterprise uses innovative strategies, process streamlining, and technological solutions to deliver better environmental results, often with lower costs and less burden, for the benefit of the public, the regulated community and government agencies.

Areas of focus for E-Enterprise Leadership Council in 2017-2018:

- a. Promote adoption of the E-Enterprise principles
 - i. Cultivate widespread adoption of the E-Enterprise management approach including its design philosophy and strategies.
 - ii. Continue to build and enhance a ‘toolbox’ of solutions (e.g., shared governance, tools, ideas, systems, shared services, innovations, technologies, methods, and approaches) that can be used, reused, and shared by states, territories, Tribes, and U.S. EPA.
- b. Develop, implement, improve, and tell the story of, current E-Enterprise projects
 - i. Implement into production the first-generation products in projects already initiated under the aegis of E-Enterprise (e.g., Pesticide Labeling, Tribal Water Quality Roadmap, and Assistance Gateway).
 - ii. Examine completed and ongoing scoping efforts (e.g., e-Permitting, and Advanced Monitoring), and identify recommended actions that merit support as appropriate.
 - iii. Complete development of and implement the Shared Services strategy
- c. Support the next generation of business process improvements and system development and enhancements projects. For example, scaling the projects identified through the Partnership Action Plan process, and new opportunities for streamlining (such as electronic reporting).

E-Enterprise Leadership Council 2017-2018 Work Plan V05.31.2017

E-Enterprise for the Environment puts into practice “Cooperative Federalism” among states, territories, Tribes, and U.S. EPA to accelerate the collaborative development, implementation, and improvement of environmental and public health protection programs. E-Enterprise uses innovative strategies, process streamlining, and technological solutions to deliver better environmental results, often with lower costs and less burden, for the benefit of the public, the regulated community and government agencies.

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 - i. Cultivate widespread adoption of the E-Enterprise management approach including its design philosophy and strategies.
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- b. Develop, implement, improve, and tell the story of, current E-Enterprise projects
 - i. Implement into production the first-generation products in projects already initiated under the aegis of E-Enterprise (e.g., Pesticide Labeling, Tribal Water Quality Roadmap, and Assistance Gateway).
 - ii. Examine completed and ongoing scoping efforts (e.g., e-Permitting, and Advanced Monitoring), and identify recommended actions that merit support as appropriate.
 - iii. Complete development of and implement the Shared Services strategy.
- c. Support the next generation of business process improvements and system development and enhancements projects. For example, scaling the projects identified through the Partnership Action Plan process, and new opportunities for streamlining (such as electronic reporting).
- d.

To: Pruitt, Scott[Pruitt.Scott@epa.gov]
Cc: Flynn, Mike[Flynn.Mike@epa.gov]; Reeder, John[Reeder.John@epa.gov]
From: Marilena Zeprun
Sent: Thur 6/1/2017 8:02:55 PM
Subject: The Paris Agreement

Hello Mr. Pruitt,

I am writing to you in regards to the much talked about Paris Agreement. It is common knowledge that you believe it isn't putting America first and the United States of America should withdraw.

As someone who is Ex. 6 - Personal Privacy I urge you to think of the generations below you who are going to have to face the environmental issues your generation leaves behind head on. The repercussions of withdrawing from The Paris Agreement will span far beyond Trump's presidency, and likely beyond your lifetime or even mine. You might simply not care about the effects, but I imagine you care about the wellbeing of this country since you sit at the top level of government. Your constituency will benefit in the long-run, I promise you that. You have the chance to be remembered as a pivotal member of government who when faced with a difficult decision, made the selfless one. We are not Syria or Nicaragua. We are America.

Sincerely,
Marilena Zeprun

To: Flynn, Mike[Flynn.Mike@epa.gov]
From: EPA Healthy Indoor Air
Sent: Thur 6/1/2017 5:31:04 PM
Subject: June Is National Healthy Homes Month

Having trouble viewing this email? [View it as a Web page.](#)
June Is National Healthy Homes Month

This June is the *first* National Healthy Homes Month—the perfect time to remember that a healthy home begins with healthy air. Why air? Because the air inside your home can contain harmful pollutants that put you and your family at risk. Keep in mind that health effects resulting from poor indoor air quality (IAQ) can be experienced soon after exposure and sometimes not until years later. Improving your home's indoor air quality is important to your health and the health of your loved ones.

The [U.S. Department of Housing and Urban Development](#) (HUD)'s theme for this first National Healthy Homes Month is *Everyone Deserves a Safe and Healthy Home*. Recognizing that people spend most of their time inside, National Healthy Homes Month introduces them to concepts and tips for keeping homes healthy and safe.

[EPA's Indoor Environments Division](#) shares HUD's vision for healthy homes nationwide: Healthy homes need healthy indoor air. These three strategies will help you improve your home's IAQ:

1. [Source Control](#)—Stop pollutants where they start. For example, adjust emissions from gas stoves and eliminate sources of mold and moisture.
2. [Ventilation Improvements](#)—Open your windows to let in some fresh air. Turn on kitchen fans when cooking and bathroom fans when showering.
3. [Air Cleaners](#)—Consider purchasing an air cleaner to remove pollutants from your home's air.

Improve your home's air quality by [using “green” cleaning products](#), [ceasing to smoke indoors](#), [having your home tested for mold and radon](#), [cleaning your air ducts](#), or [upgrading your heating and cooling systems to be more energy efficient and cleaner](#), among other steps.

Celebrate National Healthy Homes Month with EPA's Indoor Environments Division and HUD!

Follow the links below to resources that can help you improve your home's IAQ.

- HUD: [National Healthy Homes Month 2017](#)
- EPA: [Protect the IAQ in Your Home: What You Can Do Now](#)
- EPA: [Home Remodels and Energy Upgrades](#)
- EPA: [Interactive Mold House Tour](#)

This message was intended for: flynn.mike@epa.gov

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This email was sent to flynn.mike@epa.gov using GovDelivery, on behalf of: EPA Indoor Environments Division · 1200 Pennsylvania Avenue NW · Washington, DC 20460



From: Kristina Troutman
Sent: Thur 6/1/2017 1:52:24 PM
Subject: Event Invite: Using Splunk for Security? Use it for IT Ops too to save money and ensure uptime

Hi there –



I am sure by now you've heard about Splunk and all of the amazing things Splunk does to protect your critical infrastructure. You may even already be using it in your organization. But did you know that you can take your deployment of Splunk and use it in your own IT department as well? We call it "ingest once, use many".

If that piques your interest, take 2 hours out of your day next Wednesday, June 7th to hear from other customers like **University of Maryland**, **World Bank** and the **State Department** are using Splunk to

- 1) Save money by extending their existing deployment with the "ingest once, use many" logic
- 2) Achieve 100% system availability and uptime meeting critical SLA's
- 3) Monitor, troubleshoot, and remediate effortlessly
- 4) Adjust KPI's/thresholds in real-time with the advantage of machine learning

REGISTER NOW: <http://live.splunk.com/washingtondcforum>

Don't take it from me, take it from our customers. Watch these videos from our customers to understand how they are using Splunk to manage and gain better visibility into their IT operations –

-  Video: [Department of Energy](#)
-  Video: [Prince Georges County, Maryland](#)

More details on the event are below. We hope to see you there. And please, if you have any questions, don't hesitate to contact me directly.

Have a great day!

Tina

Event Details

June 7, 2017
7:30am-11:15am
Grand Hyatt Washington DC
1000 H Street NW
Washington, DC 20001

Featured Speakers

- **Tunay Basar**, Vice President and Co-Founder, Pernix Consulting
- **Steven Bochniewicz**, Senior IT Security Analyst, University of Maryland
- **Mike Makar**, Senior IT Manager, World Bank Group

Agenda

7:30am - Registration & Breakfast

8:30am - Welcome & Introductions

- **8:45am** - Customer Panel: Meeting IT Challenges - Success Stories from the Field
- **9:45am** - Break
- **10:00am** - Monitor, Troubleshoot & Manage Across the Stack with Splunk
- **10:35am** - Taking Action in Your Organization
- **11:15am** - Closing Remarks

Tina Troutman

Sr. Field Marketing Manager - Public Sector, Federal

Splunk Inc.

Mobile: 215.668.3998

Email: kt troutman@splunk.com

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Munich | Tokyo | Shanghai



To: Tamika Burton [mailto:] Ex. 6 - Personal Privacy
From: Flynn, Mike
Sent: Fri 6/9/2017 12:24:28 PM
Subject: RE: Camden Marc shut down - Ill be delayed

Ok thanks for the heads up

Mike Flynn
Acting Deputy Administrator
U.S. Environmental Protection Agency
202-564-4711

-----Original Message-----

From: Tamika Burton [mailto:] Ex. 6 - Personal Privacy
Sent: Friday, June 09, 2017 8:15 AM
To: Flynn, Mike <Flynn.Mike@epa.gov>
Subject: Camden Marc shut down - Ill be delayed

Sent from my iPhone

From: Angie Cooper - Global Public Policy
Location: EPA Office - 1200 Pennsylvania Ave, NW
Importance: Normal
Subject: Meeting with Walmart and Ryan Jackson (EPA)
Start Date/Time: Wed 6/21/2017 6:30:00 PM
End Date/Time: Wed 6/21/2017 7:15:00 PM

1200 Pennsylvania Ave, NW; Washington, DC. You should enter our North Building located near the Federal Triangle metro stop. Once you arrive, have the guards call 564-6999 and someone will come escort you to Ryan's office.

From: Horton, Melissa H.

Location: Conf. Call Ex. 6 - Personal Privacy **Access Code:** Ex. 6 - Personal Privacy

Importance: Normal

Subject: EPA Roundtable Call (2:00pm ET)

Start Date/Time: Mon 6/5/2017 6:00:00 PM

End Date/Time: Mon 6/5/2017 6:30:00 PM

Noel and I would like talk around 2:00pm on Monday (6/5) if you're available. Thanks!

Melissa Horton

Southern Company

Federal Environmental Affairs

Ex. 6 - Personal Privacy

To: Bucci, Kristine A. EOP/WHO [Ex. 6 - Personal Privacy] Locetta, Jennifer R.
EOP/WHO [Ex. 6 - Personal Privacy]
incomingppodocs@who.eop.gov [Ex. 6 - Personal Privacy]
Cc: [Ex. 6 - Personal Privacy (Special Agent)]
From: Dourson, Michael (doursoml)
Sent: Thur 6/8/2017 4:02:17 PM
Subject: Re: Pending EPA Appointment
Dourson Foreign travel Complete.docx

Dear Colleagues

Please find attached what I now consider my complete foreign travel for the last 15 years. I apologize that this effort was done in stages, but I did not have access to my paper files prior to leaving for an extended overseas business trip, and when I returned on Tuesday enhanced my report with these paper files as I sent yesterday. I have now had time to compare yesterday's file with our Conflict of Interest (COI) database and pick up several more trips. These addition trips are shown in the attached file as bold printed. The list has also been slightly reordered chronologically.

Cheers!

Michael Dourson

-- If you can't explain it simply, you don't understand it well enough. Albert Einstein



From: Michael Dourson <doursoml@ucmail.uc.edu>
Date: Wednesday, June 7, 2017 at 8:52 AM
To: "Bucci, Kristine A. EOP/WHO" <[Ex. 6 - Personal Privacy]>, "Locetta, Jennifer R. EOP/WHO" <[Ex. 6 - Personal Privacy]>
[Ex. 6 - Personal Privacy], [Ex. 6 - Personal Privacy]
Cc: [Ex. 6 - Personal Privacy (Special Agent)]
Subject: Pending EPA Appointment

Dear Colleagues

Please find attached a revised list of foreign travel in response to my interview with Special Agent Eby yesterday. This more complete listing enhances my response to the Electronic Questionnaires for Investigations Processing (e-QIP) Investigation Request #23126664 (specifically, Section 20B - Foreign Business, Professional Activities, and Foreign Government Contacts), and includes my just completed two international trips, and also trips that were available only on office calendars for which I otherwise did not have access before I left the country on this recent international travel.

I also attach a revised resume that includes these two recent trips. This resume can also be used as a replacement to that used for this investigation request.

Special Agent [REDACTED] is checking on whether my fingerprints are already available electronically. I have completed the form 278 as of yesterday. Please let me know if you need anything else from my end.

Cheers!

Michael Dourson

-- It is the mark of an instructed mind to rest satisfied with the degree of precision which the nature of the subject permits and not to seek an exactness where only an approximation of the truth is possible. Aristotle



From: Michael Dourson <doursoml@ucmail.uc.edu>

Date: Tuesday, June 6, 2017 at 4:51 PM

To: [REDACTED] **Ex. 6 - Personal Privacy (Special Agent)**

Subject: Dourson Foreign Travel

Dear Special Agent [REDACTED] **Ex. 6 - Personal Privacy**

Thanks for taking some time out of your busy day to speak with me. As discussed, attached is a more complete listing of foreign travel going back 15 years. This listing includes my just completed two international trips, and also trips that were available only on calendars in my office, and that I otherwise did not have access to when I answered the on-line version of the question regarding "Foreign Conferences, Trade Shows, Seminars, and Meetings" at home just before I left the country on the recent international travel.

The Society of Toxicology also sponsored Professor Sri Noegrohati of the Gadjah Mada University of Yogyakarta, Indonesia to visit our nonprofit Toxicology Excellence for Risk Assessment (TERA) in 2013. Dr. Bernard Gadagbui of our office and I returned to her university in the spring of 2014 to lecture for a week. The Society of Toxicology sponsored both visits, and neither Dr. Gadagbui or I was otherwise paid for this activity (other than our salary from TERA). Professor Noegrohati's email is [REDACTED] **Ex. 6 - Personal Privacy**

Please feel free to call with any additional questions.

Sincerely,



Michael L. Dourson, Ph.D., DABT, FATS, FSRA
Professor
Risk Science Center (formerly TERA)
Department of Environmental Health
University of Cincinnati, College of Medicine
160 Panzeca Way
Cincinnati OH 45267-0056

michael.dourson@uc.edu

Ex. 6 - Personal Privacy

(Mondays)

<http://eh.uc.edu/tera/>



International Trips of Michael L. Dourson, Ph.D., DABT, FATS, FSRA

International Certificate Workshop entitled Environmental Health in the Philippines: Perspectives and Approaches. Ateneo Professional School. Makati City. June 1-2, 2017.

Annual Meeting of the Taiwan Chapter of the Society for Risk Analysis. Taichung City, Taiwan. May 25-26, 2017.

The Regional Training Program on Risk Assessment. Bibliotheca Alexandrina. Alexandria, Egypt. April 24-27, 2017.

American Chemistry Council: North American Flame Retardant Association. Science Advisory Council meeting in Jerusalem, Israel. November 15-17, 2016.

Joint Meeting of the Food and Agriculture Organization of the United Nations (FAO) Panel of Experts on Pesticide Residues in Food and the Environment and the World Health Organization (WHO) Core Assessment Group on Pesticide Residues (JMPR), Rome, Italy. September 13-22, 2016.

American Chemistry Council: North American Flame Retardant Association. Science Advisory Council meeting. Brussels, Belgium. November 3-5, 2015.

Asian Pacific Economic Conference Workshop on Metals Risk Assessment. Cebu, Philippines. August 28-29, 2015.

International Workshop On Comprehensive Toxicology. Bengaluru, India. July 27-31, 2015.

Environmental Review Tribunal Hearing Case No. 12-033. Concerned Citizens Committee of Tyendinaga and Environs v. Director, Ministry of the Environment. Travelodge on Belleville, Ontario. April 27, 2015.

British Toxicology Society Annual Congress. Birmingham, UK, April 20-21, 2015.

International Manganese Institute, University of Ottawa. Ottawa, Canada. October 14, 2015.

Joint Meeting of the Food and Agriculture Organization of the United Nations (FAO) Panel of Experts on Pesticide Residues in Food and the Environment and the World Health Organization (WHO) Core Assessment Group on Pesticide Residues (JMPR). Geneva, Switzerland. September 15-24, 2015.

World Health Organization & European Food Safety Commission. Workshop on Review of the Threshold of Toxicological Concern (TTC) Approach. Brussels, Belgium. December 2-4, 2014.

Dose Response Assessment Boot Camp. Toxicology Excellence for Risk Assessment (TERA) at Gadjah Mada University. Yogyakarta, Indonesia. June 13-21, 2014.

6/8/17

AMERICAN
OVERSIGHT

International Trips of Michael L. Dourson, Ph.D., DABT, FATS, FSRA

American Chemistry Council: North American Flame Retardant Association. Science Advisory Council meeting. Frankfurt, Germany. May 7-9, 2013.

American Chemistry Council: North American Flame Retardant Association. Science Advisory Council meeting. Brussels, Belgium. May 7-9, 2012.

Risk assessment training to JTI international. Geneva, Switzerland. November 1 and 2, 2010.

Assessment of Exposure and Human Health Risks in the Flin Flon Area. Community Open House, Flin Flon, Manitoba. June 17th, 2010.

Risk Assessment Summer School (RASS) sponsored by the International Union of Toxicology. Calabar, Nigeria. May 26 to 30, 2010.

Flin Flon Soils Study. Independent Expert Review Panel Meeting Winnipeg, Manitoba. June 23-24, 2009.

University of Ottawa---specific title of conference lost. Ontario, Canada. May 6 and 7, 2008.

Meeting with Cloverleaf Tuna and the Canadian Ministry of Health. Ottawa, Canada. October 5, 2006.

Sudbury Soils Study. Sponsored by Inco Ltd., Falconbridge Ltd., the Ontario Ministry of the Environment, the Sudbury & District Health Unit, the City of Greater Sudbury, and the First Nations and Inuit Health Branch of Health Canada. Independent Expert Review Panel. Sudbury, Ontario. September 20-21, 2006.

World Health Organization---specific title of conference lost. Berlin, Germany. May 9-10, 2005.

3rd International Conference On Children's Health And The Environment. London, United Kingdom. March 31 to April 2, 2004.

NATO Advanced Research Workshop: Integrating human effectiveness and risk characterization of non-lethal weapons into antiterrorism civil science programs. Prague, Czech Republic. October 18-23, 2004.

Science Symposium Update on Science Supporting the EU Voluntary Risk Assessment, International Copper Association. Rome, Italy. May 17, 2004.

ATSDR and RIVM Expert Panel Meeting on Chemical Risk Assessment and Children's Health. Brussels, Belgium. June 26, 2003.

6/8/17

AMERICAN
OVERSIGHT

To: Davis, Gail[Davis.Gail@epa.gov]; EPA@BCDTRAVEL.COM[EPA@BCDTRAVEL.COM];
Jackson, Ryan[jackson.ryan@epa.gov]; Willis, Sharnett[Willis.Sharnett@epa.gov]
From: EPA@BCDTRAVEL.COM
Sent: Tue 6/6/2017 4:54:34 PM
Subject: UPDATED 06Jun - Travel Receipt for JACKSON/Ryan T Travel date 07Jun
Travel Receipt Communication Attachment - M2PZWQ - June 7 2017.PDF

TRAVELER NOTICE - Many airlines charge fees for baggage and other services. Amounts vary by airline and are subject to change.

Travelers are responsible for verifying all fees charged by individual carriers.

Please visit the operating carrier website of your ticketed itinerary for applicable fees.

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Total Amount: 53.24 USD

This ticket information applies to the following trip(s):

Delta Air Lines Flight from Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F on June 07 (Operated By: **Endeavor Air DbA Delta Connection**)

Delta Air Lines Flight from Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F to Rome on June 07

ElectronicTicket Number: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Invoice Number: 000168606

Ticket Amount: 789.60 USD

Prior Ticket: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Old Ticket Value: 1,842.76 USD

Penalty/Exchange Fee: 0.00 USD

Add/Collect: 0.00 USD

Form of Payment: CA*****5946

Service Fee Number: 8900693781330

Service Fee Amount: 53.24 USD

Form of Payment: CA*****5946

AMERICAN
OVERSIGHT

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/20		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed		Economy / Y
06/07/20		FCO	Confirmed		Economy / X
06/11/20	MXP-		Confirmed	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Economy / Y
06/11/20		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed		Economy / Y

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Delta Air Lines Flight **Economy**

[Online check-in](#)

Depart:

[Weather](#)

Arrive:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

[Weather](#)

Duration:

1 hour(s) and 17 minute(s) Non-stop

Status:

Confirmed - Delta Air Lines Record Locator

Equipment:

Canadair Regional Jet 900

*Operated By:

Endeavor Air DBA Delta Connection

Seat:

10D (Non smoking, Window) Confirmed

Distance:

212 miles / 341.108 kilometers

CO2 Emissions:

116.6 lbs/53 kgs

Remarks:

NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED.
FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY
PLEASE CHECK WWW.DELTA.COM

Delta Air Lines Flight Economy

[Online check-in](#)

Depart:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

[Weather](#)

Arrive:

Fiumicino, Terminal 3
Rome, Italy
Thursday, June 8 2017

[Weather](#)

Duration:

8 hour(s) and 45 minute(s) Non-stop

Total duration:

13 hour(s) and 40 minute(s) including layover(s)

Status:

Confirmed - Delta Air Lines Record Locator:

Meal:

Dinner

Equipment:

Airbus Industrie A330-300

Seat:

38B (Non smoking) Confirmed

Distance:

4263 miles / 6859.167 kilometers

CO2 Emissions:

1,594.36 lbs/724.71 kgs

Remarks:

SEAT ASSIGNMENT CONFIRMED:38B
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

[Add to Calendar](#) [Need Help?](#)

Emirates Economy

[Online check-in](#)

Depart:

Malpensa, Terminal 1
Milan, Italy

[Weather](#)

Arrive:

Sunday, June 11 2017

[Weather](#)

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Duration:

8 hour(s) and 50 minute(s) Non-stop

Status:

Confirmed - Emirates Record Locator:

Meal:

Meal

Equipment:

Airbus Industrie A380-800 Passenger

Seat:

Assigned at Check-in

Distance:

3982 miles / 6407.038 kilometers

CO2 Emissions:

1,489.27 lbs/676.94 kgs

Remarks:

FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY,
PLEASE CHECK WWW.EMIRATES.COM
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

Jetblue Flight Economy

[Online check-in](#)

Depart:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

[Weather](#)

Arrive:

[Weather](#)

Duration: 1 hour(s) and 27 minute(s) Non-stop
Total duration: 13 hour(s) and 12 minute(s) including layover(s)
Status: Confirmed - Jetblue Record Locator: [REDACTED]
Equipment: Embraer 190
Seat: 10C (Non smoking, Aisle) Confirmed
Distance: 227 miles / 365.243 kilometers
CO2 Emissions: 124.85 lbs/56.75 kgs
Remarks: FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY.
PLEASE CHECK WWW.JETBLUE.COM
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FOR THE HEARING IMPAIRED- PLEASE DIAL 711
TO ACCESS RELAY SERVICE- PROVIDE PHONE
NUMBER OF 1-866-964-1346 TO ACCESS TRAVEL
DUE TO RECENT CHANGES IN THE FY15 GOVERNMENT CITY PAIR
PROGRAM/CPP YOUR AIR RESERVATIONS ARE SUBJECT TO
CANCELLATION BY THE AIRLINES IF NOT TICKETED AT LEAST
48 HOURS PRIOR TO SCHEDULED DEPARTURE
PLEASE ENSURE ALL NECESSARY APPROVALS ARE PROCESSED IN
ACCORDANCE WITH YOUR AGENCY'S BUSINESS RULES BUT NO LESS
THAN 3 BUSINESS DAYS PRIOR TO DEPARTURE TO ENSURE TICKETING.
THIS 48 HOUR CANCELLATION RULE DOES NOT APPLY TO
INTERNATIONAL RESERVATIONS UNLESS YOUR TRIP HAS DOMESTIC
CONNECTIONS ON MORE THAN ONE AIRLINE OR THESE
RESERVATIONS REQUIRE SEPARATE AIR TICKETS.

RECONFIRM INTERNATIONAL FLIGHTS 72HRS PRIOR TO TRAVEL
CHECK IN 2 1/2 HOURS PRIOR FOR INTERNATIONAL TRAVEL
A PASSPORT VALID 6 MONTHS BEYOND INTENDED STAY
IS REQUIRED FOR THIS ITINERARY
ADVISED OF DOCUMENT REQUIREMENTS FOR THIS ITINERARY
CHECK WWW.CDC.GOV/TRAVEL FOR TRAVEL HEALTH ADVISORIES
PROPER DOCUMENTATION IS REQUIRED FOR ENTRY INTO
ARRIVAL COUNTRY
CHECK WWW.DHS.GOV/TRAVEL-ALERTS
FOR COUNTRY TRAVEL ADVISORIES
CONTACT THE DESIGNATED GOVERNMENT AGENCY IN YOUR
COUNTRY OF CITIZENSHIP FOR PASSPORT/VISA REQUIREMENTS.
TRAVEL INTO U.S. MAY REQUIRE ESTA AUTHORIZATION.
VISIT [HTTPS://ESTA.CBP.DHS.GOV](https://esta.cbp.dhs.gov) FOR DETAILS.
CHECK-IN TIMES ARE 90 MINUTES PRIOR TO DEPARTURE
FOR DOMESTIC FLIGHTS OR 120 MINUTES FOR INTERNATIONAL
ELECTRONIC TICKET/S/ WILL BE ISSUED FOR THIS TRIP
AIRPORT FEES MAY BE COLLECTED UPON ARRIVAL
OR DEPARTURE.
CHECKED BAGGAGE POLICIES VARY BASED ON CARRIER AND FINAL
WITH YOUR TRAVEL CONSULTANT OR THE AIRLINES WEBSITE.

**
**

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06Jun/11:54AM

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Air	Car	Hotel	Rail	Other
789.60 USD				
Vendor	Fare information	Refund restrictions before departure	Change restrictions after ticketing	Ticket information
Air 07Jun 7Jun	Total: USD 789.60	REFUND RESTRICTIONS MAY APPLY	CHANGE RESTRICTIONS MAY APPLY	
All quotes are provider quotes excluding possible taxes and charges en route. Currency conversions shown in this itinerary receipt are done using the bank rate applicable at the date shown in the header of this document. Please note that some local taxes and charges may be invoiced during your trip and cannot be shown at time of reservation.				

Advice to Passengers

Transportation of Hazardous Materials

Federal law forbids the carriage of hazardous material aboard the aircraft, in your luggage, or on your person. A violation can result in 5 years imprisonment and penalties of \$250,000 or more (49 U.S.C 5124). Hazardous materials include explosives, compressed gases, flammable liquids and solids, oxidizers, poisons, corrosives and radioactive materials.

Forbidden Dangerous Items Examples:

Paints, lighter fluid, fireworks, tear gases, oxygen bottles and radiopharmaceuticals. There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person. For further information, contact your airline representative.

Note: Spare batteries and fuel cells are not permitted in checked or hold baggage. These items MUST be packed in carry-on baggage. If your carry-on bag is gate checked, the spare batteries and fuel cells must be removed and carried in the cabin.

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Travelers are responsible for verifying all fees charged by individual carriers.

Please visit the operating carrier website of your ticketed itinerary for applicable fees.

To view your trip via Viewtrip, please click [here](#)

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Ticket Receipt

Total Amount: 53.24 USD

This ticket information applies to the following trip(s):

Delta Air Lines Flight 3433 from Washington DC to New York NY on June 07 (Operated By: Endeavor Air Dba Delta Connection)
Delta Air Lines Flight 444 from New York NY to Rome on June 07

Electronic Ticket Number: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Invoice Number: 000168606

Ticket Amount: 789.60 USD

Prior Ticket: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Old Ticket Value: 1,842.76 USD

Penalty/Exchange Fee: 0.00 USD

Add/Collect: 0.00 USD

Form of Payment: CA*****5946

Service Fee Number: 8900693781330

Service Fee Amount: 53.24 USD

Form of Payment: CA*****5946

Travel Summary – Agency Record Locator

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/2017	<small>Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F</small>		Confirmed		Economy / Y
06/07/2017	FCO		Confirmed		Economy / X
06/11/2017	MXR	<small>Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F</small>	Confirmed		Economy / Y
06/11/2017			Confirmed		Economy / Y

AIR - Wednesday, June 7 2017 - Agency Record Locator		Add to Calendar	Need Help?
Delta Air Lines Flight	Economy	Online check-in	
Depart:			
Arrive:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		
Duration:	1 hour(s) and 17 minute(s) Non-stop		
Status:	Confirmed - Delta Air Lines Record Locator		
Equipment:	Canadair Regional Jet 900		
*Operated By:	Endeavor Air Dba Delta Connection		
Seat:	10D (Non smoking, Window) Confirmed		
Distance:	212 miles / 341.108 kilometers		
CO2 Emissions:	116.6 lbs/53 kgs		
Remarks:	NOFREQUENTFLYERINYOURPROFILEFORCARRIERBOOKED FORUPDATETRAVELINFORMATIONONAIRLINE CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY. PLEASECHECKWWW.DELTA.COM		

AIR - Wednesday, June 7 2017 - Agency Record Locator		Add to Calendar	Need Help?
Delta Air Lines Flight	Economy	Online check-in	
Depart:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		
Arrive:	Fiumicino, Terminal 3 Rome, Italy Thursday, June 8 2017		
Duration:	8 hour(s) and 45 minute(s) Non-stop		
Total duration:	13 hour(s) and 40 minute(s) including layover(s)		
Status:	Confirmed - Delta Air Lines Record Locator		
Meal:	Dinner		
Equipment:	Airbus Industrie A330-300		
Seat:	38B (Non smoking) Confirmed		
Distance:	4263 miles / 6859.167 kilometers		
CO2 Emissions:	1,594.36 lbs/724.71 kgs		
Remarks:	SEATASSIGNMENTCONFIRMED:38B NOFREQUENTFLYERINYOURPROFILEFORCARRIERBOOKED		

AIR - Sunday, June 11 2017 - Agency Record Locator		Add to Calendar	Need Help?
Emirates Flight	Economy	Online check-in	
Depart:	Malpensa, Terminal 1 Milan, Italy Sunday, June 11 2017		
Arrive:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		
Duration:	8 hour(s) and 50 minute(s) Non-stop		
Status:	Confirmed - Emirates Record Locator		
Meal:	Meal		
Equipment:	Airbus Industrie A380-800 Passenger		
Seat:	Assigned at Check-in		
Distance:	3982 miles / 6407.038 kilometers		
CO2 Emissions:	1,489.27 lbs/676.94 kgs		
Remarks:	FORUPDATETRAVELINFORMATIONONAIRLINE CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY. PLEASECHECKWWW.EMIRATES.COM NOFREQUENTFLYERINYOURPROFILEFORCARRIERBOOKED		

AIR - Sunday, June 11 2017 - Agency Record Locator		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F
Jetblue Flight	Economy	Online check-in
Depart:		
Arrive:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	
Duration:	1 hour(s) and 27 minute(s) Non-stop	
Total duration:	13 hour(s) and 12 minute(s) including layover(s)	
Status:	Confirmed - Jetblue Record Locator: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	
Equipment:	Embraer 190	
Seat:	10C (Non smoking, Aisle) Confirmed	
Distance:	227 miles / 365.243 kilometers	
CO2 Emissions:	124.85 lbs/56.75 kgs	
Remarks:	FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY. PLEASE CHECK WWW.JETBLUE.COM NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED	

Remarks

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RECONFIRM INTERNATIONAL FLIGHTS 72 HRS PRIOR TO TRAVEL
CHECK IN 2 1/2 HOURS PRIOR FOR INTERNATIONAL TRAVEL
A PASSPORT VALID 6 MONTHS BEYOND INTENDED STAY
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ADVISED OF DOCUMENT REQUIREMENTS FOR THIS ITINERARY
CHECK WWW.CDC.GOV/TRAVEL FOR TRAVEL HEALTH ADVISORIES
PROPER DOCUMENTATION IS REQUIRED FOR ENTRY INTO
ARRIVAL COUNTRY
CHECK WWW.DHS.GOV/TRAVEL-ALERTS
FOR COUNTRY TRAVEL ADVISORIES
CONTACT THE DESIGNATED GOVERNMENT AGENCY IN YOUR
COUNTRY OF CITIZENSHIP FOR PASSPORT/VISA REQUIREMENTS.
TRAVEL INTO U.S. MAY REQUIRE ESTA AUTHORIZATION.
VISIT [HTTPS://ESTA.CBP.DHS.GOV](https://esta.cbp.dhs.gov) FOR DETAILS.
CHECK-IN TIMES ARE 90 MINUTES PRIOR TO DEPARTURE
FOR DOMESTIC FLIGHTS OR 120 MINUTES FOR INTERNATIONAL
ELECTRONIC TICKETS WILL BE ISSUED FOR THIS TRIP
AIRPORT FEES MAY BE COLLECTED UPON ARRIVAL
OR DEPARTURE.
CHECKED BAGGAGE POLICIES VARY BASED ON CARRIER AND FINAL
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Estimated trip total				789.60 USD
Air	Car	Hotel	Rail	Other
789.60 USD				
Fare details: Ticketed				
Vendor	Fare information	Refund restrictions before departure	Change restrictions after ticketing	Ticket information
Air 07 Jun 17 Jun	Total: USD 789.60	REFUNDRESTRICTIONS MAY APPLY	CHANGERESTRICCTIONS MAY APPLY	
All quotes are provider quotes excluding possible taxes and charges en route. Currency conversions shown in this itinerary receipt are done using the bank rate applicable at the date shown in the header of this document. Please note that some local taxes and charges may be invoiced during your trip and cannot be shown at time of reservation.				

Advice to Passengers

Transportation of Hazardous Materials

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Forbidden Dangerous Items Examples:

Paints, lighter fluid, fireworks, tear gases, oxygen bottles and radiopharmaceuticals. There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person. For further information, contact your airline representative.

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To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Willis, Sharnett[Willis.Sharnett@epa.gov]
From: Rob Hobart
Sent: Thur 6/1/2017 11:06:24 PM
Subject: Monsanto CEO Meeting with Administrator Pruitt - June 21st

Ryan: Monsanto CEO Hugh Grant will be in DC meeting with Congressional Members and Secretary Perdue on June 21st. I would love the opportunity to set Hugh up with you and Administrator Pruitt during this visit if it works for his schedule. He is available from 11-3:30 on the 21st.

Please let me know if I should include others in the Administrator's scheduling operation.

Thanks for your consideration.

Rob



To: Pruitt, Scott[Pruitt.Scott@epa.gov]
Cc: Jackson, Ryan[jackson.ryan@epa.gov]
From: Bob Perciasepe
Sent: Thur 6/8/2017 3:27:42 PM
Subject: Thank You and an Invitation
[S Pruitt C2ES BELC invitation June2017.pdf](#)

Scott:

I enjoyed our discussion several weeks back and as promised here is an invitation to our next Business Council meeting In July. I hope you will give it consideration. I also wanted you to know that I have connected with Henry Darwin to tell him I am happy to help as he settles in to his new post with your team.

Thanks for your nice note and let me know if visiting with our council will work.

Bob

C2ES

Ex. 6 - Personal Privacy



CENTER FOR CLIMATE
AND ENERGY SOLUTIONS

June 8, 2017

Scott Pruitt
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Ave. NW
Washington, D.C. 20460

Dear Mr. Pruitt:

I would like to invite you to address the next meeting of the C2ES Business Environmental Leadership Council (BELC). The event will take place here in Washington, D.C., on the afternoon of July 19 and the morning of July 20 at Microsoft's **Washington office**, 901 K Street, NW, 11th Floor. Distinguished guests normally speak for 10-15 minutes, and then engage in conversation for another 15 minutes. We would be honored if you would provide remarks on the morning of Thursday, July 20, from 10:15 to 10:45 am. If this time is not convenient for you, but you would still like to address these important stakeholders, we will work to accommodate your schedule within the timeframe of the meeting.

The BELC is comprised of 32 mostly Fortune 500 companies, which together represent \$2 trillion in revenue and over 3 million employees. BELC membership spans a range of sectors, including electricity (e.g. Dominion, DTE Energy, Duke Energy, Entergy, Exelon, National Grid, NRG, PG&E); oil and gas (BP, Shell); automotive (GM, Toyota); chemicals (Dow); information and communication technology (HP, IBM, Intel, Microsoft); diversified manufacturing (Alcoa, Arconic, GE); and financial services (Bank of America, JP Morgan). A full member list can be found at the end of this letter. These companies demonstrate climate leadership by managing their own greenhouse gas emissions, creating technologies and processes that reduce emissions, and working with policy makers to develop environmentally effective solutions that also work for business. As a condition of membership, all BELC companies support the need for mandatory policies to reduce greenhouse gas emissions.

The BELC meets three times each year, and I know these industry representatives will greatly value the opportunity to hear your perspectives. We anticipate around 50 will be in attendance, with the event open only to our business council members and C2ES staff. All comments are off-the-record and the meeting operates under the Chatham House Rule.

Past speakers have included James Connaughton, former Chairman of the White House Council on Environmental Quality; Tom Pyle, President, American Energy Alliance; Dan Utech, former Special Assistant to the President for Energy and Climate Change; Gina McCarthy, former EPA Administrator; Jonathan Pershing, former U.S. Special Envoy for Climate Change, Department of State; Kevin Welsh, former Director for Environment and Climate Change, National Security Council.

Thank you for your consideration, and I hope that you will be able to join us. If you have any questions about logistics, please do not hesitate to have your staff contact Meg Storch, our Director of Business

Engagement, at storchm@c2es.org or 703-516-0635. Either Meg or our Director of Operations, Adria Cooper, will contact your office to follow up on this request.

Sincerely,



Bob Perciasepe
President

cc: Janet Peace
Meg Storch
Adria Cooper

BUSINESS ENVIRONMENTAL LEADERSHIP COUNCIL MEMBERS

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Dominion	Intel	Toyota
The Dow Chemical Co.	JP Morgan Chase	

To: Davis, Gail[Davis.Gail@epa.gov]; EPA@BCDTRAVEL.COM[EPA@BCDTRAVEL.COM]; Jackson, Ryan[jackson.ryan@epa.gov]; Willis, Sharnett[Willis.Sharnett@epa.gov]
From: EPA@BCDTRAVEL.COM
Sent: Tue 6/6/2017 4:48:27 PM
Subject: Travel Itinerary for JACKSON / RYAN T

TRAVELER NOTICE - Many airlines charge fees for baggage and other services. Amounts vary by airline and are subject to change.
Travelers are responsible for verifying all fees charged by individual carriers.
Please visit the operating carrier website of your ticketed itinerary for applicable fees.

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/2017	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		Confirmed		Economy / Y
06/07/2017	FCO DL		Confirmed		Economy / X
06/11/2017	MXP- EK		Confirmed	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Economy / Y
06/11/2017	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		Confirmed		Economy / Y

Delta Air Lines Flight Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Economy

Depart:

Weather

Arrive:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Weather

Duration: 1 hour(s) and 17 minute(s) Non-stop

Status: Confirmed - Delta Air Lines Record Locator:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Equipment: Canadair Regional Jet 900

*Operated By: Endeavor Air Dba Delta Connection

Seat: 10D (Non smoking, Window) Confirmed

Distance: 212 miles / 341.108 kilometers

CO2 Emissions: 116.6 lbs/53 kgs

Remarks: FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY.
PLEASE CHECK WWW.DELTA.COM
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

Delta Air Lines Flight Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Economy

Depart:

Weather

Arrive:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F
Fiumicino, Terminal 3

Weather

Rome, Italy

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Thursday, June 8 2017

Duration: 8 hour(s) and 45 minute(s) Non-stop

Total duration: **13 hour(s) and 40 minute(s) including layover(s)**

Status: Confirmed - Delta Air Lines Record Locator:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Meal:
Equipment: Airbus Industrie A330-300
Seat: 38B (Non smoking) Confirmed
Distance: 4263 miles / 6859.167 kilometers
CO2 Emissions: 1,594.36 lbs/724.71 kgs
Remarks: SEAT ASSIGNMENT CONFIRMED:38B
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

Emirates Flight Economy

Depart: Malpensa, Terminal 1
Milan, Italy

Weather

Arrive: Sunday, June 11 2017

Weather

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Duration: 8 hour(s) and 50 minute(s) Non-stop
Status: Confirmed - Emirates Record Locator: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Meal: Meal
Equipment: Airbus Industrie A380-800 Passenger
Seat: Assigned at Check-in
Distance: 3982 miles / 6407.038 kilometers
CO2 Emissions: 1,489.27 lbs/676.94 kgs

Jetblue Flight Economy

Depart:

Weather

Arrive:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Weather

Duration: 1 hour(s) and 27 minute(s) Non-stop

Total duration:
Status: Confirmed - Jetblue Record Locator: XXXXXXXXXXXX
Equipment: Embraer 190
Seat: 10C (Non smoking, Aisle) Confirmed
Distance: 227 miles / 365.243 kilometers
CO2 Emissions: 124.85 lbs/56.75 kgs

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THE BCD TRAVEL TEAM AT 1-866-964-1346
FOR OUTSIDE THE US CALL COLLECT 770-829-2609
FOR THE HEARING IMPAIRED- PLEASE DIAL 711
TO ACCESS RELAY SERVICE- PROVIDE PHONE
NUMBER OF 1-866-964-1346 TO ACCESS TRAVEL
DUE TO RECENT CHANGES IN THE FY15 GOVERNMENT CITY PAIR
PROGRAM/CPY YOUR AIR RESERVATIONS ARE SUBJECT TO
CANCELLATION BY THE AIRLINES IF NOT TICKETED AT LEAST
48 HOURS PRIOR TO SCHEDULED DEPARTURE
PLEASE ENSURE ALL NECESSARY APPROVALS ARE PROCESSED IN
ACCORDANCE WITH YOUR AGENCY'S BUSINESS RULES BUT NO LESS
THAN 3 BUSINESS DAYS PRIOR TO DEPARTURE TO ENSURE TICKETING.
THIS 48 HOUR CANCELLATION RULE DOES NOT APPLY TO
INTERNATIONAL RESERVATIONS UNLESS YOUR TRIP HAS DOMESTIC
CONNECTIONS ON MORE THAN ONE AIRLINE OR THESE
RESERVATIONS REQUIRE SEPARATE AIR TICKETS.

RECONFIRM INTERNATIONAL FLIGHTS 72HRS PRIOR TO TRAVEL
CHECK IN 2 1/2 HOURS PRIOR FOR INTERNATIONAL TRAVEL
A PASSPORT VALID 6 MONTHS BEYOND INTENDED STAY
IS REQUIRED FOR THIS ITINERARY
ADVISED OF DOCUMENT REQUIREMENTS FOR THIS ITINERARY
CHECK WWW.CDC.GOV/TRAVEL FOR TRAVEL HEALTH ADVISORIES
PROPER DOCUMENTATION IS REQUIRED FOR ENTRY INTO
ARRIVAL COUNTRY
CHECK WWW.DHS.GOV/TRAVEL-ALERTS
FOR COUNTRY TRAVEL ADVISORIES
CONTACT THE DESIGNATED GOVERNMENT AGENCY IN YOUR
COUNTRY OF CITIZENSHIP FOR PASSPORT/VISA REQUIREMENTS.
TRAVEL INTO U.S. MAY REQUIRE ESTA AUTHORIZATION.
VISIT [HTTPS://ESTA.CBP.DHS.GOV](https://esta.cbp.dhs.gov) FOR DETAILS.
CHECK-IN TIMES ARE 90 MINUTES PRIOR TO DEPARTURE
FOR DOMESTIC FLIGHTS OR 120 MINUTES FOR INTERNATIONAL
ELECTRONIC TICKET/S/ WILL BE ISSUED FOR THIS TRIP
AIRPORT FEES MAY BE COLLECTED UPON ARRIVAL

OR DEPARTURE.

CHECKED BAGGAGE POLICIES VARY BASED ON CARRIER AND FINAL WITH YOUR TRAVEL CONSULTANT OR THE AIRLINES WEBSITE.

**

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DESTINATION. FOR THE LATEST INFORMATION PLEASE CHECK

06Jun/11:48AM

TRAVELER NOTICE – Please check with your carrier(s) for travel documents required (Passport, VISA, etc.) and security requirements regarding permitted and prohibited articles and goods related to your travel.

Air	Car	Hotel	Rail	Other
789.60 USD				
Vendor	Fare information	Refund restrictions before departure	Change restrictions after ticketing	Ticket information
Air <small>Payable Amount (A) (B) (C) (D) (E) (F) (G) (H) (I) (J) (K) (L) (M) (N) (O) (P) (Q) (R) (S) (T) (U) (V) (W) (X) (Y) (Z) (AA) (AB) (AC) (AD) (AE) (AF) (AG) (AH) (AI) (AJ) (AK) (AL) (AM) (AN) (AO) (AP) (AQ) (AR) (AS) (AT) (AU) (AV) (AW) (AX) (AY) (AZ) (BA) (BB) (BC) (BD) (BE) (BF) (BG) (BH) (BI) (BJ) (BK) (BL) (BM) (BN) (BO) (BP) (BQ) (BR) (BS) (BT) (BU) (BV) (BW) (BX) (BY) (BZ) (CA) (CB) (CC) (CD) (CE) (CF) (CG) (CH) (CI) (CJ) (CK) (CL) (CM) (CN) (CO) (CP) (CQ) (CR) (CS) (CT) (CU) (CV) (CW) (CX) (CY) (CZ) (DA) (DB) (DC) (DD) (DE) (DF) (DG) (DH) (DI) (DJ) (DK) (DL) (DM) (DN) (DO) (DP) (DQ) (DR) (DS) (DT) (DU) (DV) (DW) (DX) (DY) (DZ) (EA) (EB) (EC) (ED) (EE) (EF) (EG) (EH) (EI) (EJ) (EK) (EL) (EM) (EN) (EO) (EP) (EQ) (ER) (ES) (ET) (EU) (EV) (EW) (EX) (EY) (EZ) (FA) (FB) (FC) (FD) (FE) (FF) (FG) (FH) (FI) (FJ) (FK) (FL) (FM) (FN) (FO) (FP) (FQ) (FR) (FS) (FT) (FU) (FV) (FW) (FX) (FY) (FZ) (GA) (GB) (GC) (GD) (GE) (GF) (GG) (GH) (GI) (GJ) (GK) (GL) (GM) (GN) (GO) (GP) (GQ) (GR) (GS) (GT) (GU) (GV) (GW) (GX) (GY) (GZ) (HA) (HB) (HC) (HD) (HE) (HF) (HG) (HH) (HI) (HJ) (HK) (HL) (HM) (HN) (HO) (HP) (HQ) (HR) (HS) (HT) (HU) (HV) (HW) (HX) (HY) (HZ) (IA) (IB) (IC) (ID) (IE) (IF) (IG) (IH) (II) (IJ) (IK) (IL) (IM) (IN) (IO) (IP) (IQ) (IR) (IS) (IT) (IU) (IV) (IW) (IX) (IY) (IZ) (JA) (JB) (JC) (JD) (JE) (JF) (JG) (JH) (JI) (JJ) (JK) (JL) (JM) (JN) (JO) (JP) (JQ) (JR) (JS) (JT) (JU) (JV) (JW) (JX) (JY) (JZ) (KA) (KB) (KC) (KD) (KE) (KF) (KG) (KH) (KI) (KJ) (KK) (KL) (KM) (KN) (KO) (KP) (KQ) (KR) (KS) (KT) (KU) (KV) (KW) (KX) (KY) (KZ) (LA) (LB) (LC) (LD) (LE) (LF) (LG) (LH) (LI) (LJ) (LK) (LL) (LM) (LN) (LO) (LP) (LQ) (LR) (LS) (LT) (LU) (LV) (LW) (LX) (LY) (LZ) (MA) (MB) (MC) (MD) (ME) (MF) (MG) (MH) (MI) (MJ) (MK) (ML) (MM) (MN) (MO) (MP) (MQ) (MR) (MS) (MT) (MU) (MV) (MW) (MX) (MY) (MZ) (NA) (NB) (NC) (ND) (NE) (NF) (NG) (NH) (NI) (NJ) (NK) (NL) (NM) (NN) (NO) (NP) (NQ) (NR) (NS) (NT) (NU) (NV) (NW) (NX) (NY) (NZ) (OA) (OB) (OC) (OD) (OE) (OF) (OG) (OH) (OI) (OJ) (OK) (OL) (OM) (ON) (OO) (OP) (OQ) (OR) (OS) (OT) (OU) (OV) (OW) (OX) (OY) (OZ) (PA) (PB) (PC) (PD) (PE) (PF) (PG) (PH) (PI) (PJ) (PK) (PL) (PM) (PN) (PO) (PP) (PQ) (PR) (PS) (PT) (PU) (PV) (PW) (PX) (PY) (PZ) (QA) (QB) (QC) (QD) (QE) (QF) (QG) (QH) (QI) (QJ) (QK) (QL) (QM) (QN) (QO) (QP) (QQ) (QR) (QS) (QT) (QU) (QV) (QW) (QX) (QY) (QZ) (RA) (RB) (RC) (RD) (RE) (RF) (RG) (RH) (RI) (RJ) (RK) (RL) (RM) (RN) (RO) (RP) (RQ) (RR) (RS) (RT) (RU) (RV) (RW) (RX) (RY) (RZ) (SA) (SB) (SC) (SD) (SE) (SF) (SG) (SH) (SI) (SJ) (SK) (SL) (SM) (SN) (SO) (SP) (SQ) (SR) (SS) (ST) (SU) (SV) (SW) (SX) (SY) (SZ) (TA) (TB) (TC) (TD) (TE) (TF) (TG) (TH) (TI) (TJ) (TK) (TL) (TM) (TN) (TO) (TP) (TQ) (TR) (TS) (TT) (TU) (TV) (TW) (TX) (TY) (TZ) (UA) (UB) (UC) (UD) (UE) (UF) (UG) (UH) (UI) (UJ) (UK) (UL) (UM) (UN) (UO) (UP) (UQ) (UR) (US) (UT) (UU) (UV) (UW) (UX) (UY) (UZ) (VA) (VB) (VC) (VD) (VE) (VF) (VG) (VH) (VI) (VJ) (VK) (VL) (VM) (VN) (VO) (VP) (VQ) (VR) (VS) (VT) (VU) (VV) (VW) (VX) (VY) (VZ) (WA) (WB) (WC) (WD) (WE) (WF) (WG) (WH) (WI) (WJ) (WK) (WL) (WM) (WN) (WO) (WP) (WQ) (WR) (WS) (WT) (WU) (WV) (WW) (WX) (WY) (WZ) (XA) (XB) (XC) (XD) (XE) (XF) (XG) (XH) (XI) (XJ) (XK) (XL) (XM) (XN) (XO) (XP) (XQ) (XR) (XS) (XT) (XU) (XV) (XW) (XX) (XY) (XZ) (YA) (YB) (YC) (YD) (YE) (YF) (YG) (YH) (YI) (YJ) (YK) (YL) (YM) (YN) (YO) (YP) (YQ) (YR) (YS) (YT) (YU) (YV) (YW) (YX) (YZ) (ZA) (ZB) (ZC) (ZD) (ZE) (ZF) (ZG) (ZH) (ZI) (ZJ) (ZK) (ZL) (ZM) (ZN) (ZO) (ZP) (ZQ) (ZR) (ZS) (ZT) (ZU) (ZV) (ZW) (ZX) (ZY) (ZZ)</small>	07Jun 07Jun	Total: USD 789.60	REFUND RESTRICTIONS MAY APPLY	CHANGE RESTRICTIONS MAY APPLY
All quotes are provider quotes excluding possible taxes and charges en route. Currency conversions shown in this itinerary receipt are done using the bank rate applicable at the date shown in the header of this document. Please note that some local taxes and charges may be invoiced during your trip and cannot be shown at time of reservation.				

Advice to Passengers

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Federal law forbids the carriage of hazardous material aboard the aircraft, in your luggage, or on your person. A violation can result in 5 years imprisonment and penalties of \$250,000 or more (49 U.S.C 5124). Hazardous materials include explosives, compressed gases, flammable liquids

and solids, oxidizers, poisons, corrosives and radioactive materials.

Forbidden Dangerous Items Examples:

Paints, lighter fluid, fireworks, tear gases, oxygen bottles and radiopharmaceuticals. There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person. For further information, contact your airline representative.

Note: Spare batteries and fuel cells are not permitted in checked or hold baggage. These items **MUST** be packed in carry-on baggage. If your carry-on bag is gate checked, the spare batteries and fuel cells must be removed and carried in the cabin.

Email generated on 06Jun/4:48 PM UTC

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To: Hupp, Sydney[hupp.sydney@epa.gov]
Cc: Stanko, Joseph[jstanko@hunton.com]; Dickerson, Aaron[dickerson.aaron@epa.gov]; Woodward, Cheryl[Woodward.Cheryl@epa.gov]; Jackson, Ryan[jackson.ryan@epa.gov]
From: Reamy, Jeff
Sent: Thur 6/1/2017 11:02:01 PM
Subject: RE: [EXTERNAL]Re: 3 PM meeting Friday June 2nd

What time in the afternoon and I will check?

Thanks for the assistance I understand how busy you all are.

Sent with Good (www.good.com)

From: Hupp, Sydney <hupp.sydney@epa.gov>
Sent: Thursday, June 1, 2017 4:29:58 PM
To: Reamy, Jeff
Cc: Stanko, Joseph; Dickerson, Aaron; Woodward, Cheryl; Jackson, Ryan
Subject: [EXTERNAL]Re: 3 PM meeting Friday June 2nd

Thank you so much for checking! Unfortunately he wouldn't be available until afternoon. Should we try for then or look to the next time he is in town?

Thanks!

Sent from my iPhone

On Jun 1, 2017, at 2:43 PM, Reamy, Jeff <Jeffrey.M.Reamy@p66.com> wrote:

Monday June 5 can work for Larry if we can meet sometime between 8:30 a.m. – noon?
Please advise and again many thanks.

From: Hupp, Sydney [<mailto:hupp.sydney@epa.gov>]
Sent: Thursday, June 01, 2017 2:20 PM
To: Stanko, Joseph
Cc: Dickerson, Aaron; Woodward, Cheryl; Jackson, Ryan; Reamy, Jeff
Subject: [EXTERNAL]Re: 3 PM meeting Friday June 2nd

Thank you so much for sending! Unfortunately due to some very last minute changes, I don't think the Administrator will be available tomorrow afternoon. Is there any chance you all might have some availability on Monday? I'm so so sorry for the change.

Thank you!

Sent from my iPhone

On May 31, 2017, at 5:38 PM, Stanko, Joseph <jstanko@hunton.com> wrote:

Sydney:

Some final details from our end.

Attendees will be:

Larry Ziemba, Executive Vice President, Refining, Phillips 66

Accompanied by

Jeff Reamy, Vice President, Federal Affairs, Phillips 66

Any day-of information can be sent to Jeff at Jeffrey.M.Reamy@p66.com or by cell,
Ex. 6 - Personal Privacy Would you let Jeff know the name/number of the contact person that security should call once they are cleared in the North entrance?

Again, thank you very much for your assistance.

Regards,

Joe

<image001.jpg> **Joseph Stanko**

p 202.955.1529

[bio](#) | [vCard](#)

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

[hunton.com](#)

From: Hupp, Sydney [<mailto:hupp.sydney@epa.gov>]
Sent: Monday, May 22, 2017 5:25 PM
To: Stanko, Joseph
Cc: Dickerson, Aaron; Woodward, Cheryl
Subject: RE: Meeting Request

Sounds good and can do! Looping in Cheryl to provide logistics!

Sydney Hupp

Executive Scheduler

Office of the Administrator

Ex. 6 - Personal Privacy (c)

From: Stanko, Joseph [<mailto:jstanko@hunton.com>]
Sent: Monday, May 22, 2017 5:12 PM
To: Hupp, Sydney <hupp.sydney@epa.gov>

Cc: Dickerson, Aaron <dickerson.aaron@epa.gov>
Subject: RE: Meeting Request

Also, would about 45 minutes be possible? Thanks again.

<image001.jpg> **Joseph Stanko**

Partner

jstanko@hunton.com

p 202.955.1529

[bio](#) | [vCard](#)

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

hunton.com

From: Hupp, Sydney [<mailto:hupp.sydney@epa.gov>]
Sent: Monday, May 22, 2017 4:26 PM
To: Stanko, Joseph
Cc: Dickerson, Aaron
Subject: RE: Meeting Request

Around 3PM would be ideal.

Sydney Hupp

Executive Scheduler

Office of the Administrator

Ex. 6 - Personal Privacy (C)

From: Stanko, Joseph [<mailto:jstanko@hunton.com>]
Sent: Monday, May 22, 2017 3:45 PM
To: Hupp, Sydney <hupp.sydney@epa.gov>
Cc: Dickerson, Aaron <dickerson.aaron@epa.gov>
Subject: RE: Meeting Request

Are there particular time windows you need to work with on the 2nd? Thanks.

Joe

<image001.jpg> **Joseph Stanko**

Partner

jstanko@hunton.com

p 202.955.1529

[bio](#) | [vCard](#)

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

hunton.com

From: Hupp, Sydney [<mailto:hupp.sydney@epa.gov>]
Sent: Monday, May 22, 2017 3:33 PM
To: Stanko, Joseph
Cc: Dickerson, Aaron
Subject: RE: Meeting Request

Thank you!

Sydney Hupp

Executive Scheduler

Office of the Administrator

Ex. 6 - Personal Privacy (C)

From: Stanko, Joseph [<mailto:jstanko@hunton.com>]
Sent: Monday, May 22, 2017 2:02 PM
To: Hupp, Sydney <hupp.sydney@epa.gov>
Cc: Dickerson, Aaron <dickerson.aaron@epa.gov>
Subject: RE: Meeting Request

Sydney:

Thanks, I know the Administrator's schedule is complicated enough, but with international travel it's an additional degree of difficulty.

I'll vet this promptly from my end and respond back.

Thanks, much appreciated.

Regards,

Joe

<image001.jpg> **Joseph Stanko**

Partner

jstanko@hunton.com

p 202.955.1529

[bio](#) | [vCard](#)

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

hunton.com

From: Hupp, Sydney [<mailto:hupp.sydney@epa.gov>]

Sent: Monday, May 22, 2017 1:14 PM

To: Stanko, Joseph

Cc: Dickerson, Aaron

Subject: RE: Meeting Request

My sincere apologies for the delay Mr. Stanko, was trying to sort out his departure for international travel. Do you have any availability left on the 2nd?

Thank you!

Sydney Hupp

Executive Scheduler

Office of the Administrator

Ex. 6 - Personal Privacy (C)

From: Stanko, Joseph [<mailto:jstanko@hunton.com>]

Sent: Friday, May 19, 2017 1:37 PM

To: Hupp, Sydney <hupp.sydney@epa.gov>

Cc: Jackson, Ryan <jackson.ryan@epa.gov>

Subject: RE: Meeting Request

Sidney:

Would it be possible for you to let me know if the June 2nd or June 5th would work for Administrator Pruitt? Mr. Ziemba is happy to work with other dates, but if the June 2nd and 5th are off the table, it will be helpful to know for other scheduling needs.

Thanks for all your assistance.

Joe

<image001.jpg> **Joseph Stanko**

Partner

jstanko@hunton.com

p 202.955.1529

[bio](#) | [vCard](#)

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

hunton.com

From: Stanko, Joseph
Sent: Monday, May 15, 2017 5:50 PM
To: 'hupp.sydney@epa.gov'
Cc: Ryan Jackson (jackson.ryan@epa.gov)
Subject: FW: Meeting Request

Dear Sydney:

I would like to request a meeting with the Administrator for Larry Ziemba, Executive Vice President, Refining, for Phillip 66. Larry has responsibility for the company's refining operations and serves in a leadership position with the American Fuels and Petrochemical Manufacturers Association. He has been working with other refiners and the Auto industry regarding the potential for higher octane fuels and other forward looking fuels issues. A brief bio is set forth below.

Larry is currently scheduled to be in D.C. on Friday June 2nd and Monday June 5th. If those days would not work with the Administrator's schedule, he is happy to work

with other days that would be more convenient for Administrator Pruitt.

Lawrence (Larry) M. Ziemba is executive vice president, Refining, for Phillips 66, a diversified energy manufacturing and logistics company. He has 35 years of experience in the oil and gas industry. Before joining Phillips 66 in May 2012, Ziemba previously worked for ConocoPhillips as president, Global Refining, a role he took on after serving as president, U.S. Refining, since 2003. He first joined Phillips Petroleum in 2001 after its acquisition of Tosco and was in charge of handling the integration of the refining operations during the merger with Conoco. Originally from Chicago, he started his career at Unocal's Chicago refinery in 1977. In 1988, he moved to Unocal's Los Angeles corporate headquarters as manager of planning/business development for its downstream business. In 1991, he managed the acquisition of Shell's Carson refinery and subsequently integrated the asset into Los Angeles operations. In 1997, Ziemba joined Tosco as they acquired Unocal's downstream business. In 1999, he was named vice president of Tosco's three San Francisco area refineries. In 2000, he was assigned to handle the acquisition and takeover of the Wood River refinery. He has held a number of industry and community leadership positions including board positions with American Fuels and Petrochemical Manufacturers Association, WRB Refining LP and the Western States Petroleum Association. Ziemba earned a bachelor's degree in mechanical engineering from the University of Illinois-Champaign in 1977 and a Master of Business Administration degree from the University of Chicago in 1985.

Thank you for your consideration,

Joe Stanko

<image001.jpg> **Joseph Stanko**

Partner

jstanko@hunton.com

p 202.955.1529

[bio](#) | [vCard](#)

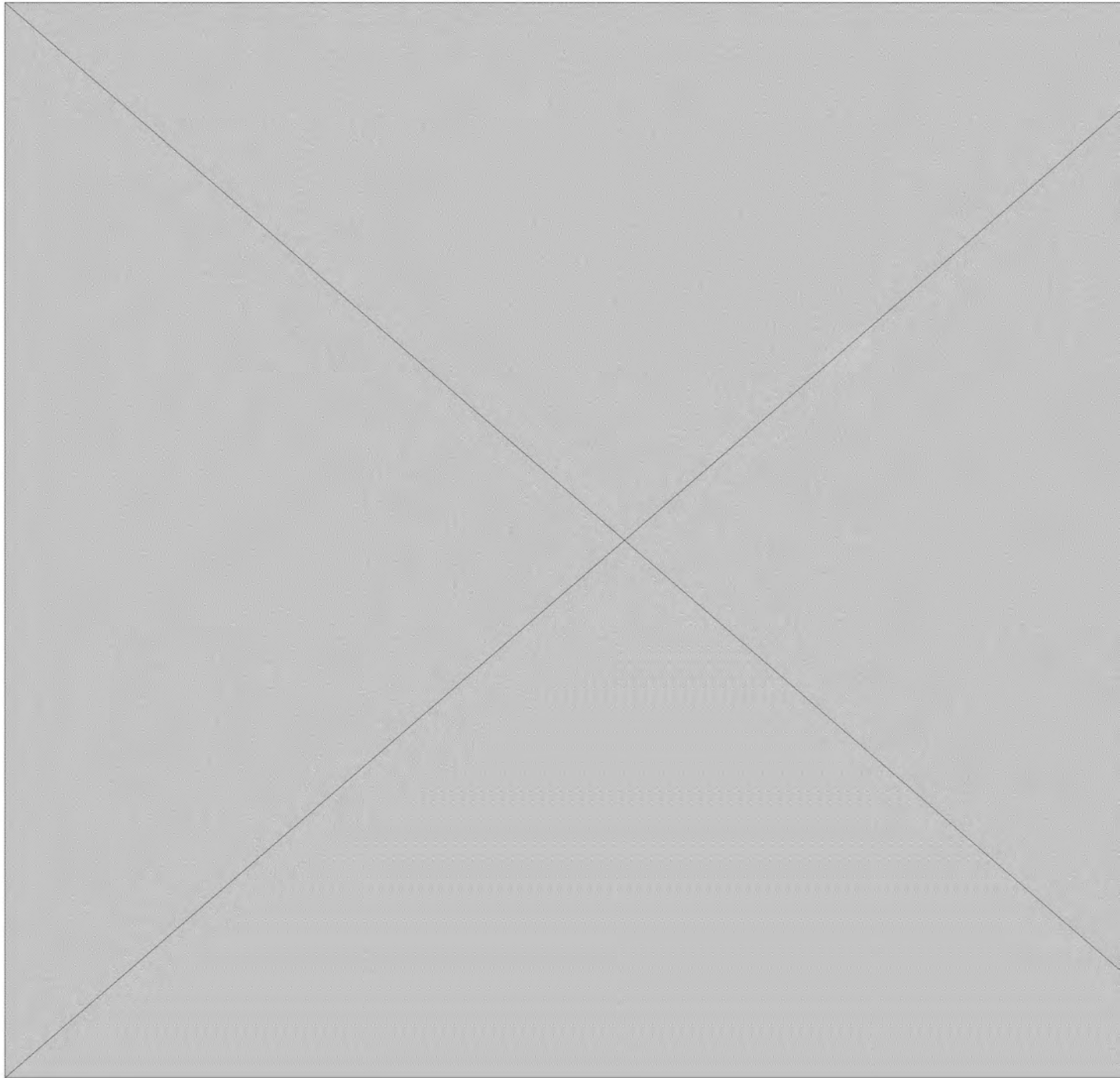
Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

hunton.com

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Toast to Congress 2017
Sent: Tue 6/6/2017 4:35:55 PM
Subject: You're invited! WSWA's Toast to Congress

Reminder: You're invited to WSWA's Toast to Congress

This invitation is non-transferable



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This email was sent to jackson.ryan@epa.gov

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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Brook Simmons
Sent: Thur 6/8/2017 3:15:19 PM
Subject: Ryan, here's a 1-minute update on industry discussions re: Uintah and Ouray Reservation permitting issues...

Industry met with EPA Region 8 representatives last week. Here are three key takeaways:

- EPA started the meeting very steadfast in promoting the previously retracted existing source rule. That position softened over the course of our discussions. In place of the prior rule drafted by EPA, Newfield Exploration advocated that EPA publish an advanced notice of proposed rulemaking to start a more transparent process for the development of a reservation-specific permit rule that would also address existing source controls. By the conclusion of the meeting R8 agreed to start the process with an ANOPR.
- Industry agreed to work hand in hand with EPA to update the emission inventory for the Uintah and Ouray Reservation and document the emission reductions that have occurred since 2014. This inventory would be the baseline for the analysis of potential existing source controls for inclusion in the reservation specific permit rule.
- Carl Daly, Director of Air Programs for R8, was helpful in finding compromise and appeared to be influential in guiding R8 leadership towards a solution.

We will keep you up to speed and will reach out if we believe a face-to-face meeting with you and/or other key EPA-DC or EOP personnel is appropriate. Several operators and the Ute Tribe remain interested in resolving this issue in a manner consistent with Administration priorities.

Brook A. Simmons
Government Affairs Manager
Main: 281-210-5100

Office: 281-210-5359

Cell: Ex. 6 - Personal Privacy

NEWFIELD



To: Ex. 6 - M. Catanzaro, EOP Dravis, Samantha[dravis.samantha@epa.gov]; Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Strayer, Marjorie[mstrayer@livingstongroupdc.com]; Martin, Allen[amartin@livingstongroupdc.com]; Livingston, Robert[rlivingston@livingstongroupdc.com]; Graham, Jane[jgraham@livingstongroupdc.com]
From: Livingston, Robert
Sent: Tue 6/6/2017 3:15:17 PM
Subject: FW: Hicksville, NY Environmental Settlement

Dear Friends,

The Hicksville, NY, environmental dilemma continues without resolution. We are hopeful that a brief meeting with EPA Administrator Pruitt will put the matter to rest, but if it is to be done in this fiscal year, we would very much like to have the meeting in the next few weeks. Your assistance in making the meeting happen will be greatly appreciated.

Sincerely,

Bob Livingston

The Livingston Group

202 289 9881

From: Livingston, Robert
Sent: Wednesday, May 03, 2017 1:43 PM
To: azoolin.liel@epa.gov
Cc: Strayer, Marjorie; Graham, Jane
Subject: Appointment Request

E. Scott Pruitt

Administrator

U.S. Environmental Protection Agency

Scheduler is Liel Azoolin

202-564-7332

Dear Administrator Pruitt,

The former Sylvania Corning Plant in Hicksville, NY provided nuclear fuel elements for the nation's weapons reactors during the Cold War from 1952-65. The Atomic Energy Commission (AEC) paid for the decontamination and decommissioning of the site in 1966, pronounced it fit for "normal use," and later certified that it represented "no hazard to health and safety."

However, after a series of investigations by the Nuclear Regulatory Commission, at the request of the New York Department of Environmental Conservation, it was found that the site has "radiological contamination above applicable limits" in 1996.

Through a series of mergers and sales, this property is now the responsibility of Verizon. We have worked with the Department of Energy, Congress, and the Army Corps of Engineers beginning in 2003 to first get this property listed as part of the Formerly Utilized Site Remedial Action Program (it is) and to have the Corps follow that process to clean the site (13 years later it is still not remediated).

Verizon has been trying to work out a deal with the Corps whereby Verizon will provide substantial funds to expedite the remediation. All that Verizon asks in return is that ACE complete the remediation without any further financial or active involvement by Verizon. Towards this end, Verizon made a comprehensive proposal to DOJ, USACE and EPA last Fall but have been unable to get a response due to EPA's failure to meet. We believe that the USACE and the Justice Department are happy with the proposal, but that the EPA staff may be blocking the deal.

We would very much like to have a face to face meeting with you at your convenience. We will have a ranking officer of Verizon with us and we hope that we might successfully reach a conclusion that would benefit both Verizon and the US taxpayer.

Thank you in advance for your consideration.

Sincerely,

Bob Livingston

The Livingston Group

202 289 9881

From: Livingston, Robert

Sent: Wednesday, May 3, 2017 10:32 AM

To: Ex. 6 - Personal Privacy

Cc: Strayer, Marjorie <mstrayer@livingstongroupdc.com>; Martin, Allen <amartin@livingstongroupdc.com>; Livingston, Robert <rlivingston@livingstongroupdc.com>

Subject: FW: Hicksville, NY Environmental Settlement

Dear Mike,

Thank you again for your consideration in March of our methanol project in Lake Charles, La. We remain hopeful.

Today, I write of another project. The former Sylvania Corning Plant in Hicksville, NY provided nuclear fuel elements for the nation's weapons reactors during the Cold War from 1952-65. The Atomic Energy Commission (AEC) paid for the decontamination and decommissioning of the site in 1966, pronounced it fit for "normal use," and later certified that it represented "no hazard to health and safety."

However, after a series of investigations by the Nuclear Regulatory Commission, at the request of the New York Department of Environmental Conservation, it was found that the site has "radiological contamination above applicable limits" in 1996.

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We would very much like to have a face to face meeting with Administrator of EPA Pruitt, and we would deeply appreciate your efforts to help this meeting take place. We will have a ranking officer of Verizon with us, and we hope that we might successfully reach a conclusion that would benefit both Verizon and the US taxpayer.

Thank you in advance for your consideration.

Sincerely,

Bob Livingston

The Livingston Group

202 289 9881

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Dimitri.Karakitsos@hklaw.com
Sent: Mon 6/5/2017 2:21:42 PM
Subject: FW: Mark Vergnano Letters to President Trump and EPA Administrator Scott Pruitt
[MPV Letter to President Trump \(June 1, 2017\).pdf](#)
[MPV Letter to Pruitt EPA \(May 31, 2017\).pdf](#)

Dimitrios Karakitsos | Holland & Knight
Partner
Holland & Knight LLP
800 17th Street N.W., Suite 1100 | Washington, DC 20006
Phone 202.469.5132 | Fax 202.955.5564
dimitri.karakitsos@hklaw.com | www.hklaw.com

[Add to address book](#) | [View professional biography](#)

From: Karakitsos, Dimitrios J (WAS - X75132)
Sent: Friday, June 02, 2017 10:19 AM
To: jackson.ryan@epa.gov
Subject: Mark Vergnano Letters to President Trump and EPA Administrator Scott Pruitt

Ryan,

Wanted to make sure you had copies of both these letters .

Happy Friday!

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Mark P. Vergnano
President
Chief Executive Officer

The Chemours Company
1007 Market Street
Wilmington, DE 19899

June 1, 2017

The Honorable Donald J. Trump
President of the United States
The White House
1600 Pennsylvania Ave., N.W.
Washington, D.C. 20500

Dear President Trump:

Headquartered in Wilmington, Delaware with revenues of \$6 billion, Chemours is a global leader in titanium technologies, fluoroproducts and chemical solutions, providing our customers with solutions in a wide range of industries with market-defining products, application expertise and chemistry-based innovations. Our ingredients are found in plastics and coatings, refrigeration and air conditioning, mining and oil refining operations and general industrial manufacturing. We have approximately 7,000 employees, 5,000 located in the United States, and 26 manufacturing sites serving approximately 4,000 customers in North America, Latin America, Asia-Pacific and Europe.

As a leading U.S.-based chemical company, we are committed to putting American innovation to work to create global, market-leading product opportunities, and, in the process, support new manufacturing investments and new jobs in the United States. Our belief in the importance of U.S. investment and job creation is backed up by our actions, as Chemours has expansions underway to several of our U.S. manufacturing facilities, including a notable \$300 million new refrigerant facility at our Corpus Christi, Texas location that will result in the creation of more than 350 new direct and indirect jobs. This investment will create the largest production facility in the world for low global warming potential (GWP) HFO refrigerants. U.S.-based technology and U.S.-based production will serve the global needs for this important product.

Critical to the success of our Texas facility; indeed, critical to any American manufacturing investment is regulatory and policy consistency. On this front, we are pleased with your selection of Scott Pruitt to lead the U.S. Environmental Protection Agency (EPA).

We recently had the opportunity to meet with Administrator Pruitt in Washington, D.C., to discuss our company, our products and our U.S. investments, including our Corpus Christi, TX plant expansion. We came away from the meeting impressed with Administrator Pruitt's demeanor, intellect and vision for EPA.

The Honorable Donald J. Trump
June 1, 2017
Page 2

Administrator Pruitt's common sense approach to streamlining implementation of key changes to the Toxic Substances Control Act, as required by the 2016 Lautenberg Chemical Safety Act, in order for the EPA to more efficiently approve new chemicals into the marketplace, is important for the U.S. chemical industry and Chemours. And, EPA's timely approval of new chemicals is, quite simply, essential to the success of our Texas plant expansion and the new jobs it will create.

Following our meeting with Administrator Pruitt, we saw immediate action from EPA to address the challenges and delays with new chemical product approvals that existed when he took office. We appreciate Administrator Pruitt's leadership and decisive action on this important matter.

We believe Administrator Pruitt can be a new type of leader at EPA; namely, a professional who understands that the agency can deliver on its core mission of protecting human health and the environment and at the same time, promote U.S. investment and job creation via responsible and consistent environmental policies and regulations. Chemours believes the EPA can and should do both, and we welcome the opportunities that such a rational approach will create for the U.S. economy.

Sincerely,



Mark P. Vergnano

cc: Administrator Scott Pruitt, U.S. Environmental Protection Agency



Mark P. Vergnano
President
Chief Executive Officer

The Chemours Company
1007 Market Street
Wilmington, DE 19899

May 30, 2017

The Honorable Scott Pruitt
Administrator
United States Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

Dear Administrator Pruitt:

I write to thank you for our recent meeting in Washington, D.C.

We appreciated the opportunity to hear you describe your vision for leading the Environmental Protection Agency. As we discussed during the meeting, you represent a new type of leader at EPA; namely, a professional who understands that the agency can deliver on its core mission of protecting human health and the environment and, at the same time, promote U.S. investment and job creation via responsible and consistent environmental policies and regulations. Chemours believes the EPA can do both; indeed, we believe the agency should do both, and we welcome the opportunities that such a rational approach will create for the U.S. economy.

We also appreciated the chance to provide you with more information about Chemours. With approximately 7,000 employees, (5,000 of whom are located in the United States) and 26 manufacturing sites, which serve approximately 4,000 customers in North America, Latin America, Asia-Pacific and Europe, we are committed to putting American innovation to work to create global, market-leading product opportunities, and, in the process, support new manufacturing investments and new jobs in the United States.

Please know that our discussions with you about how your staff is going about the process of implementing key changes to the Toxic Substances Control Act, required by the 2016 Lautenberg Chemical Safety Act, produced immediate and substantive results. Since our meeting, significant progress has been made to address our concerns about EPA's implementation of the changes to Section 5 – the new chemicals program – and we believe the backlog for new product approvals that existed when you took office is on the way to being addressed. We appreciate your leadership on this important issue.

Directly related to one of the many market sectors we are involved in, we also shared with you that we have previously invested hundreds of millions of dollars in the development of new generation refrigerants, such as hydrofluoroolefins (HFOs). These refrigerants provide automobile manufacturers with a low-cost alternative to meeting light-duty vehicle standards that are already being implemented in the United States. Importantly, Chemours is also making investments that will create additional American manufacturing and commercial jobs.

The Honorable Scott Pruitt
May 30, 2017
Page 2

Of note, you will recall we talked about an ongoing \$300 million manufacturing investment that will result in the construction of a new HFO production facility at our Corpus Christi plant site in Ingleside, TX.

Please consider this letter a personal invitation for Chemours to host you and your senior staff this fall at the Corpus Christi plant. We would value the opportunity to provide you and your invitees with a tour of the facility, including the new expansion project, and to talk in more detail about our new products and the global markets that will be served from this plant.

We also would value the opportunity to continue dialogue with you about how your leadership at EPA can pave the way for new investment and job creation by the entire U.S. chemical industry.

We trust you will favorably view this invitation to tour our Corpus Christi plant later this year, and we will follow up directly with your senior staff to select a date for same.

Sincerely,

A handwritten signature in black ink, appearing to read 'Mark P. Vergnano', with a stylized, flowing script.

Mark P. Vergnano

cc: Mr. Ryan Jackson
Mr. Greg Smith

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Nextgov
Sent: Thur 6/8/2017 3:00:16 PM
Subject: Veterans Affairs to Adopt Same Commercial Health Records Platform as DOD

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—
Dear Ryan,

As an individual who works in government technology, we'd like to tell you more about our public sector technology publication, [Nextgov](#). Nextgov is the leading federal technology website, and a meeting place for government and industry managers to read the latest news and discussions and share insights on deploying IT successfully to achieve agency missions.

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- **Veterans Affairs to Adopt Same Commercial Health Records Platform as DOD** | In a press release, Shulkin said he took the highly unusual step of signing a “determination of findings” in order to issue a solicitation directly to Cerner Corp., which—together with Leidos in a \$4 billion contract—is developing DOD’s MHS Genesis platform.
- **Optimizing the Data Center: How federal agencies squeeze savings from smart consolidation** | In this eBook, Nextgov looks at the government’s progress in closing and optimizing its data centers while exploring a series of use cases among federal agencies and research centers.

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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Chris Hessler
Sent: Thur 6/1/2017 10:37:39 PM
Subject: Fwd: Sicily. Nee Bologna

Strike "Sicily".
Insert "Bologna".

Begin forwarded message:

From: <CHessler@ajw-inc.com>
Date: June 1, 2017 at 6:33:02 PM EDT
To: Ryan Jackson <jackson.ryan@epa.gov>
Subject: Sicily.

Ryan,
Debating going to Sicily.
A) when are you gonna be there?
B) do you expect to have any evenings free - or you on duty the whole time?

To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]; Catanzaro, Michael J.
EOP/WHO[Ex. 6 - Personal Privacy] Schwab, Justin[schwab.justin@epa.gov]; Hupp,
Sydney[hupp.sydney@epa.gov]
From: Morgan, Curt
Sent: Wed 6/14/2017 9:22:00 PM
Subject: Re: Roundtable June 19

Ryan - I thought I had responded to you earlier but cannot find my reply email. I would like to represent Vistra at the round table with Administrator Pruitt next week. Please confirm the acceptance of my attendance. Best regards, Curt Morgan

Sent from my iPhone

On Jun 4, 2017, at 1:19 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

EXTERNAL EMAIL

All --

Thank you for your interest, participation, and your help in coordinating your trade association members' participation in the round table with US EPA Administrator Scott Pruitt to discuss a regulatory path forward for the utility sector. Having an open and robust dialogue with the regulated community is a foundational component of setting meaningful and balanced environmental standards. We look forward to learning more about your perspective as the utility sector not only powers our economic growth, but is also at the forefront of developing a more efficient and cleaner energy future.

The roundtable will start at 1 pm on June 19 at the US EPA headquarters in the Green Room in the Administrator's Suite. We will follow up with an official agenda in the coming days. We have received a number of RSVP's and appreciate that. Please confirm your attendance or the attendance of your trade association members by June 12. Should you have any questions, please email or call at [Ex. 6 - Personal Privacy]

Sincerely,

Ryan

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy

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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: David Schnare
Sent: Wed 6/7/2017 3:10:09 PM
Subject: CO2 science?

Ryan:
Is the following new report true?

Appearing on conservative Breitbart radio on Monday, the EPA chief seemed to agree with host Joel Pollak's assertion that carbon dioxide isn't a pollutant that should be regulated by Pruitt's agency. He also brought up the notion of a federal science review, called "red teams," a concept that is supported by climate skeptics seeking to introduce more doubt around the science and is used for military maneuvers at the Department of Defense.

Pruitt said the country needs a "true, legitimate, peer-reviewed, objective, transparent discussion about CO2."

"The American people need to have that type of honest, open discussion, and it's something we hope to provide as part of our leadership," he said.

If so, would you consider asking me to participate in that effort?

David.

--

David W. Schnare, Esq. Ph.D.

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Records Management Training Workshop June 20 2017
Sent: Thur 6/8/2017 2:36:20 PM
Subject: [SPAM] Early Bird Ends June 10th - Meeting the Gov Records Mgmt Mandates

Records Management in Government Training Workshop XIV

*Agency Self Assessments are in to NARA
- How Can You Improve Your Scores?*

Managing Government Records Directive Updates:

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**Don Rosen
Director of Records Management Oversight and Reporting
National Archives and Records Administration (NARA)
and
Arian Ravanbakhsh**

Manager, Policy and Program Support Team
National Archives and Records Administration (NARA)

Additional Government Speakers

Matthew Olsen

Acting Chief Privacy and Data Sharing Officer

Acting Executive Director

Office of Privacy & Information Management (PIM)

U.S. Department of Health and Human Services

Mark Patrick

Chief, Information Management Division

The Joint Staff Secretariat

Department of Defense

Additional Government Speakers to be Announced Soon

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Goals of this workshop are:

- **Focus on email retention regulation and policy and email best practices**
- **Provide attendees with a clear idea of the changes envisioned in the Directive,**
- **Strategies to obtain funding for solutions**
- **Help understand the role of the Senior Agency Official (SAO) in setting agency priorities and achieving program success**
- **Describe the developing roadmap that will lead to realizing these changes, and**
- **Describe the steps individual records managers can do now to align their work with the records management future the Directive envisions.**
- **Specific Agency Actions to be Completed in response to the Directive by 2019**
- **Establishing a community of interest for Records Management**
- **Current email policy and regulations**
- **Tips for planning for the Directive's 2019 Deadline**

Overview:

With the recent headlines regarding government email retention and e-discovery, it is important to understand how the NARA/OMB regulations and deadlines will impact your agency. This one-day Potomac Forum Workshop will focus on the activities mandated by the NARA/OMB Records Management Directive. Key executives from NARA and government agencies will discuss the directive and its implementation. Detailed review and analysis of the directive will be presented to help agencies better understand what they need to do, how to do it, and how to get the funding necessary to be successful. The recent Agency Submissions to NARA are discussed along with scores and suggestions for improving Agency Scores.

What You Will Learn:

- What happens now that the 2016 deadline has passed
- What needs to be done to comply with the provisions of OMB M-12-18
- How the relationship between NARA and Federal agencies have and will change
- How the role of technology will evolve in the achievement of OMB M-12-18's goals
- What this initiative will mean for Federal records management in the short and long term
- What the components of a sustainable Records Management program will be in this new environment
- A better idea of the commitment of time and resources needed to comply with the Directive
- How the Senior Agency Officials can and are making a difference in improving the management of government records
- NARA Requirements for managing email - lessons learned from recent IRS news event - Complying with the Law - the Federal Records Act and what it means for email and other records losses
- The November 2014 Records Management Legislation and what it means to Agencies and Records Managers
- and more...

Why You Should Attend:

- To gain a clear understanding of OMB M-12-18
- To assist you in getting the best start on the many changes OMB M-12-18 will bring to your agency
- To learn key funding strategies to help your agency implement solutions to meet its objectives
- Hear from other government officials about the practical aspects of complying with the Directive
- Ensure success of your Records Management Program as you implement the Directive
- Lessons Learned since the publication of the Directive
- Understand the NARA requirements for email management - avoiding embarrassing non-conformance
- Understand email retention regulation, policy, and legislation.

Who Should Attend:

- CIO's and the Staff including technical staff involved with Records Management
- Senior Agency Officials (SAO's) charged with responsibility for the

implementation of solutions for their agency

- IGs and Staff
- Government Records Managers
- All those with responsibility for initiating and carrying out the reforms mentioned in the President's Records Management Directive
- Professionals responsible for managing information resources on an enterprise-wide basis
- Those needing to understand latest NARA policy and guidance
- Contracting, Procurement and Acquisition Management Professionals
- Program Managers Who Must Understand Records Management in Government
- Government executives who want to understand email retention and records management regulation, policy, and legislation.
- Industry Partners

Format:

This workshop will combine keynote presentations by NARA, lectures on implementing the Directive, real world examples and discussions to provide a thorough, enjoyable day of learning.

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*It was informative and what I have learned can be
taken back and applied to my office.
Records Management Specialist
Civilian Department*

*Excellent - I got a number of good ideas and suggestions.
Well worth the investment.
Regulation Council
Civilian Administration*

*One of the best trainings I have been to.
Records Manager
Navy Center*

*Very well done
Deputy Commissioner for Legislative and Congressional Affairs
Civilian Agency*

*The overall workshop was great. I learned a lot of valuable information on to help me
in my current position and provide additional guidance for my organization
Records Management Officer and Team Lead
DOT Agency*

*... for anyone who needs to follow the directive for records management
Admin Specialist
Civilian Commission*

*Outstanding!
Management and Program Analyst
DOT Agency*

*Very Well organized. Job well done!
DoD IG Specialist*

*Great!
Assistant Records Manager
Small Agency Commission*

Workshop for Government and Industry Partners

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400 North Washington Street, Alexandria, Virginia, 22314, USA

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Workforce Requirements for Exec Order Workshop
Sent: Tue 6/6/2017 2:32:37 PM
Subject: [SPAM] Learn from 10 Gov Leaders: Workshop to Implement EO Workforce Requirements

**Workforce Requirements
of the President's
Executive Order 13781
Training Workshop
June 28, 2017**

Confirmed Speakers

**Terry Gerton
President & CEO
National Academy of
Public Administration
(NAPA)**

**Bob Corsi
Secretary of Board of
Directors
Senior Executives
Association (SEA)
Former Assistant Deputy
Chief of Staff for
Manpower, Personnel and
Services
Headquarters, U.S. Air
Force**

**Rebecca Ayers
Performance Management
Solutions, OPM**

**Tom Gilbert
Assistant Director of
Strategic Issues, GAO**

**Deb Tomchek
Former Director of Human
Resources (HR)**

DOJ and DOC

Jim Read
Director, Policy and
Evaluation
Merit Systems Protection
Board

Jeffrey Neal
Senior Vice President, ICF
Former CHCO at DLA and
DHS

Lou Kerestes
Founder & CEO
GovInnovators

Mika Cross
Federal Workplace Expert

**Not Just Human Capital -
Please Review and Forward to
Your Government Executives,
Managers and Staff
Who Play a Part in Meeting the
Workforce Requirements of the
President's Executive Order**

Potomac Forum Training Workshop

**The President's Executive Order:
How to Meet the Workforce
Requirements of the
President's Executive Order
13781
Training Workshop**

***What Federal Executives, Managers,
and Supervisors Need to Know
to Support the Goals of the Executive
Order for
Reforming the Federal Government
and
Reducing the Federal Civilian
Workforce***

**Date: Thursday, June 28,
2017**

Sponsored by:

Potomac Forum, Ltd.
the leader in high quality training since 1984

www.PotomacForum.org
(703) 683-1613
info@PotomacForum.org

**Location of Workshop:
Willard InterContinental Hotel
Washington, D.C.**

**Potomac Forum Training Workshops
are 100% Educational
and NOT Sales or Marketing Events**

**The Press is Not Permitted to
Encourage
Candid Discussion in our 100%
Learning Environment**

Overview:

The president issued an executive order (EO) on March 13, 2017 which requires agencies to plan and implement long-term workforce reductions and incorporate the plan as a government-wide workforce priority into their Agency Strategic Plan and/or Human Capital Operating Plan.

This Potomac Forum training workshop for government will provide information for agency executives, managers, and staff to respond to the EO.

Experienced human capital executives and experts will share their insight and experience in developing and implementing long-term and near-term workforce management practices that will help attendees understand how best to improve performance, increase accountability, and reduce costs.

This workshop will provide you with practical, easy-to-implement tools and resources to help you achieve the best results through your agency's efforts to restructure, reshape and eliminate inefficient functions to achieve the goals of EO 13781 while enhancing employee performance to increase mission efficacy and increase retention.

What You Will Learn:

- **A framework to plan for reorganization and functional consolidation**
- **Avoiding common pitfalls to managing performance and**

conduct in the modern workplace

- **Where to find practical support mechanisms, resources and help for managers and supervisors**
- **How to prepare the workforce for activities in cost cutting, reshaping, reducing, and reorganization**
- **Managing change through effective internal and external communications**
- **Driving positive outcomes by leveraging the Federal Employee Viewpoint Survey Results into actionable steps that help cultivate an inclusive culture designed to retain top talent and optimize employee potential**

Why You Should Attend:

- **Learn proven management strategies to demonstrate return on investment, cost savings, and enhanced management efficiencies from developing an effective long-term workforce reduction plan**
- **Understand how to leverage alternative service delivery models and streamline mission support functions to provide greater efficiency while improving quality**
- **Maximize employee performance by focusing on concrete steps to increase performance and effectively deal with poor performers**
- **Optimize employee recognition programs designed to recognize, reward and retain top performers**
- **Build your toolkit for cultivating a culture of engagement and accountability designed to achieve enhanced organizational and individual performance**

Who Should Attend:

- **Federal supervisors and managers**
- **Federal HR practitioners and anyone responsible for implementing agency restructuring plans**
- **Inspector Generals and Staff**
- **Federal employees or members of employee affinity groups**
- **Communications practitioners responsible for leading change management and internal communications campaigns**

Format:

Lecture, guest speakers, and practical exercises.

CEUs Awarded Upon Workshop Completion

Press is NOT Invited to Register or Attend

"Send-A-Team" Registration Fees

No Press to Promote Candid Discussion

Registration and Information:

www.potomacforum.org

Call: (703) 683-1613

Info@PotomacForum.org

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This email was sent by: **Potomac Forum, Ltd.**

400 North Washington Street, Alexandria, Virginia, 22314, USA

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Steckelberg, Kathy
Sent: Wed 6/7/2017 2:16:48 PM
Subject: RE: Thank you

I know. You're short-staffed enough as it is! ☺

Kathy Steckelberg
Vice President, Government Relations

Edison Electric Institute
701 Pennsylvania Avenue, N.W.
Washington, D.C. 20004-2696
202-508-5478
202-508-5403 (fax)

Ex. 6 - Personal Privacy

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www.eei.org

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From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Wednesday, June 07, 2017 10:14 AM
To: Steckelberg, Kathy
Subject: RE: Thank you

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Of course. And I was kidding.

From: Steckelberg, Kathy [mailto:KSteckelberg@eei.org]
Sent: Wednesday, June 7, 2017 10:13 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>

Subject: RE: Thank you

I think it was a case of our member company staffer being relatively new to DC and totally misunderstanding a conversation, since the entire thing sounded totally ludicrous to me. That happens all too often here.

Kathy Steckelberg
Vice President, Government Relations

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202-508-5403 (fax)

Ex. 6 - Personal Privacy

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From: Jackson, Ryan [<mailto:jackson.ryan@epa.gov>]
Sent: Wednesday, June 07, 2017 10:10 AM
To: Steckelberg, Kathy
Subject: RE: Thank you

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That EPA staffer will be fired this morning.

From: Steckelberg, Kathy [<mailto:KSteckelberg@eei.org>]
Sent: Wednesday, June 7, 2017 10:09 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>

Subject: Thank you

I thought that was a silly rumor, but one of our member company people insisted she had heard it directly from an EPA staffer. So, I needed to run it to ground. Clearly a misunderstanding.

Kathy Steckelberg
Vice President, Government Relations

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To: Myron Ebell[Myron.Ebell@cei.org]
From: Myron Ebell
Sent: Thur 6/1/2017 9:36:53 PM
Subject: FW: Statement by President Trump on the Paris Climate Accord

Paris Climate Cup

Final / OT

Swamp 0

Deplorables 1

In response to numerous requests, please see below. Thanks again for all you can do to flood the zone with public support for this pullout today....

Paul Teller

Special Assistant to the President for Legislative Affairs

The White House

From: White House Press Office [<mailto:whitehouse-noreply@messages.whitehouse.gov>]
Sent: Thursday, June 1, 2017 5:11 PM
To: Teller, Paul S. EOP/WHO
Subject: Statement by President Trump on the Paris Climate Accord

THE WHITE HOUSE

Office of the Press Secretary

For Immediate Release

June 1, 2017

STATEMENT BY PRESIDENT TRUMP
ON THE PARIS CLIMATE ACCORD

Rose Garden

3:32 P.M. EDT

THE PRESIDENT: Thank you very much. (Applause.) Thank you. I would like to begin by addressing the terrorist attack in Manila. We're closely monitoring the situation, and I will continue to give updates if anything happens during this period of time. But it is really very sad as to what's going on throughout the world with terror. Our thoughts and our prayers are with all of those affected.

Before we discuss the Paris Accord, I'd like to begin with an update on our tremendous -- absolutely tremendous -- economic progress since Election Day on November 8th. The economy is starting to come back, and very, very rapidly. We've added \$3.3 trillion in stock market value to our economy, and more than a million private sector jobs.

I have just returned from a trip overseas where we concluded nearly \$350 billion of military and economic development for the United States, creating hundreds of thousands of jobs. It was a very, very successful trip, believe me. (Applause.) Thank you. Thank you.

In my meetings at the G7, we have taken historic steps to demand fair and reciprocal trade that gives Americans a level playing field against other nations. We're also working very hard for peace in the Middle East, and perhaps even peace between the Israelis and the Palestinians. Our attacks on terrorism are greatly stepped up -- and you see that, you see it all over -- from the previous administration, including getting many other countries to make major contributions to the fight against terror. Big, big contributions are being made by countries that weren't doing so much in the form of contribution.

One by one, we are keeping the promises I made to the American people during my campaign for President -- whether it's cutting job-killing regulations; appointing and confirming a tremendous Supreme Court justice; putting in place tough new ethics rules; achieving a record reduction in illegal immigration on our southern border; or bringing jobs, plants, and factories back into the United States at numbers which no one until this point thought even possible. And believe me, we've just begun. The fruits of our labor will be seen very shortly even more so.

On these issues and so many more, we're following through on our commitments. And I don't want anything to get in our way. I am fighting every day for the great people of this country. Therefore, in order to fulfill my solemn duty to protect America and its citizens, the United States will withdraw from the Paris Climate Accord -- (applause) -- thank you, thank you -- but begin negotiations to reenter either the Paris Accord or a really entirely new transaction on terms that are fair to the United States, its businesses, its workers, its people, its taxpayers. So we're getting out. But we will start to negotiate, and we will see if we can make a deal that's fair. And if we can, that's great. And if we can't, that's fine. (Applause.)

As President, I can put no other consideration before the wellbeing of American citizens. The Paris Climate Accord is simply the latest example of Washington entering into an agreement that disadvantages the United States to the exclusive benefit of other countries, leaving American workers -- who I love -- and taxpayers to absorb the cost in terms of lost jobs, lower wages, shuttered factories, and vastly diminished economic production.

Thus, as of today, the United States will cease all implementation of the non-binding Paris Accord and the draconian financial and economic burdens the agreement imposes on our country. This includes ending the implementation of the nationally determined contribution and, very importantly, the Green Climate Fund which is costing the United States a vast fortune.

Compliance with the terms of the Paris Accord and the onerous energy restrictions it has placed on the United States could cost America as much as 2.7 million lost jobs by 2025 according to the National Economic Research Associates. This includes 440,000 fewer manufacturing jobs -- not what we need -- believe me, this is not what we need -- including automobile jobs, and the further decimation of vital American industries on which countless communities rely. They rely for so much, and we would be giving them so little.

According to this same study, by 2040, compliance with the commitments put into place by the previous administration would cut production for the following sectors: paper down 12 percent; cement down 23 percent; iron and steel down 38 percent; coal -- and I happen to love the coal miners -- down 86 percent; natural gas down 31 percent. The cost to the economy at this time would be close to \$3 trillion in lost GDP and 6.5 million industrial jobs, while households would have \$7,000 less income and, in many cases, much worse than that.

Not only does this deal subject our citizens to harsh economic restrictions, it fails to live up to our environmental ideals. As someone who cares deeply about the environment, which I do, I cannot in good conscience support a deal that punishes the United States -- which is what it does -- the world's leader in environmental protection, while imposing no meaningful obligations on the world's leading polluters.

For example, under the agreement, China will be able to increase these emissions by a staggering number of years -- 13. They can do whatever they want for 13 years. Not us. India makes its participation contingent on receiving billions and billions and billions of dollars in foreign aid from developed countries. There are many other examples. But the bottom line is that the Paris Accord is very unfair, at the highest level, to the United States.

Further, while the current agreement effectively blocks the development of clean coal in America -- which it does, and the mines are starting to open up. We're having a big opening in two weeks. Pennsylvania, Ohio, West Virginia, so many places. A big opening of a brand-new mine. It's unheard of. For many, many years, that hasn't happened. They asked me if I'd go. I'm going to try.

China will be allowed to build hundreds of additional coal plants. So we can't build the plants, but they can, according to this agreement. India will be allowed to double its coal production by 2020. Think of it: India can double their coal production. We're supposed to get rid of ours. Even Europe is allowed to continue construction of coal plants.

In short, the agreement doesn't eliminate coal jobs, it just transfers those jobs out of America and the United States, and ships them to foreign countries.

This agreement is less about the climate and more about other countries gaining a financial advantage over the United States. The rest of the world applauded when we signed the Paris Agreement -- they went wild; they were so happy -- for the simple reason that it put our country, the United States of America, which we all love, at a very, very big economic disadvantage. A cynic would say the obvious reason for economic competitors and their wish to see us remain in the agreement is so that we continue to suffer this self-inflicted major economic wound. We would find it very hard to compete with other countries from other parts of the world.

We have among the most abundant energy reserves on the planet, sufficient to lift millions of America's poorest workers out of poverty. Yet, under this agreement, we are effectively putting these reserves under lock and key, taking away the great wealth of our nation -- it's great wealth, it's phenomenal wealth; not so long ago, we had no idea we had such wealth -- and leaving millions and millions of families trapped in poverty and joblessness.

The agreement is a massive redistribution of United States wealth to other countries. At 1 percent growth, renewable sources of energy can meet some of our domestic demand, but at 3 or 4 percent growth, which I expect, we need all forms of available American energy, or our country -- (applause) -- will be at grave risk of brownouts and blackouts, our businesses will come to a halt in many cases, and the American family will suffer the consequences in the form of lost jobs and a very diminished quality of life.

Even if the Paris Agreement were implemented in full, with total compliance from all nations, it is estimated it would only produce a two-tenths of one degree -- think of that; this much -- Celsius reduction in global temperature by the year 2100. Tiny, tiny amount. In fact, 14 days of carbon emissions from China alone would wipe out the gains from America -- and this is an incredible statistic -- would totally wipe out the gains from America's expected reductions in the year 2030, after we have had to spend billions and billions of dollars, lost jobs, closed factories, and suffered much higher energy costs for our businesses and for our homes.

As the Wall Street Journal wrote this morning: "The reality is that withdrawing is in America's

economic interest and won't matter much to the climate." The United States, under the Trump administration, will continue to be the cleanest and most environmentally friendly country on Earth. We'll be the cleanest. We're going to have the cleanest air. We're going to have the cleanest water. We will be environmentally friendly, but we're not going to put our businesses out of work and we're not going to lose our jobs. We're going to grow; we're going to grow rapidly. (Applause.)

And I think you just read -- it just came out minutes ago, the small business report -- small businesses as of just now are booming, hiring people. One of the best reports they've seen in many years.

I'm willing to immediately work with Democratic leaders to either negotiate our way back into Paris, under the terms that are fair to the United States and its workers, or to negotiate a new deal that protects our country and its taxpayers. (Applause.)

So if the obstructionists want to get together with me, let's make them non-obstructionists. We will all sit down, and we will get back into the deal. And we'll make it good, and we won't be closing up our factories, and we won't be losing our jobs. And we'll sit down with the Democrats and all of the people that represent either the Paris Accord or something that we can do that's much better than the Paris Accord. And I think the people of our country will be thrilled, and I think then the people of the world will be thrilled. But until we do that, we're out of the agreement.

I will work to ensure that America remains the world's leader on environmental issues, but under a framework that is fair and where the burdens and responsibilities are equally shared among the many nations all around the world.

No responsible leader can put the workers -- and the people -- of their country at this debilitating and tremendous disadvantage. The fact that the Paris deal hamstring the United States, while empowering some of the world's top polluting countries, should dispel any doubt as to the real reason why foreign lobbyists wish to keep our magnificent country tied up and bound down by this agreement: It's to give their country an economic edge over the United States. That's not going to happen while I'm President. I'm sorry. (Applause.)

My job as President is to do everything within my power to give America a level playing field and to create the economic, regulatory and tax structures that make America the most prosperous and productive country on Earth, and with the highest standard of living and the highest standard of environmental protection.

Our tax bill is moving along in Congress, and I believe it's doing very well. I think a lot of people will be very pleasantly surprised. The Republicans are working very, very hard. We'd love to have support from the Democrats, but we may have to go it alone. But it's going very well.

The Paris Agreement handicaps the United States economy in order to win praise from the very foreign capitals and global activists that have long sought to gain wealth at our country's expense. They don't put America first. I do, and I always will. (Applause.)

The same nations asking us to stay in the agreement are the countries that have collectively cost America trillions of dollars through tough trade practices and, in many cases, lax contributions to our critical military alliance. You see what's happening. It's pretty obvious to those that want to keep an open mind.

At what point does America get demeaned? At what point do they start laughing at us as a country? We want fair treatment for its citizens, and we want fair treatment for our taxpayers. We don't want other leaders and other countries laughing at us anymore. And they won't be. They won't be.

I was elected to represent the citizens of Pittsburgh, not Paris. (Applause.) I promised I would exit or renegotiate any deal which fails to serve America's interests. Many trade deals will soon be under renegotiation. Very rarely do we have a deal that works for this country, but they'll soon be under renegotiation. The process has begun from day one. But now we're down to business.

Beyond the severe energy restrictions inflicted by the Paris Accord, it includes yet another scheme to redistribute wealth out of the United States through the so-called Green Climate Fund - nice name -- which calls for developed countries to send \$100 billion to developing countries all on top of America's existing and massive foreign aid payments. So we're going to be paying

billions and billions and billions of dollars, and we're already way ahead of anybody else. Many of the other countries haven't spent anything, and many of them will never pay one dime.

The Green Fund would likely obligate the United States to commit potentially tens of billions of dollars of which the United States has already handed over \$1 billion -- nobody else is even close; most of them haven't even paid anything -- including funds raided out of America's budget for the war against terrorism. That's where they came. Believe me, they didn't come from me. They came just before I came into office. Not good. And not good the way they took the money.

In 2015, the United Nation's departing top climate officials reportedly described the \$100 billion per year as "peanuts," and stated that "the \$100 billion is the tail that wags the dog." In 2015, the Green Climate Fund's executive director reportedly stated that estimated funding needed would increase to \$450 billion per year after 2020. And nobody even knows where the money is going to. Nobody has been able to say, where is it going to?

Of course, the world's top polluters have no affirmative obligations under the Green Fund, which we terminated. America is \$20 trillion in debt. Cash-strapped cities cannot hire enough police officers or fix vital infrastructure. Millions of our citizens are out of work. And yet, under the Paris Accord, billions of dollars that ought to be invested right here in America will be sent to the very countries that have taken our factories and our jobs away from us. So think of that.

There are serious legal and constitutional issues as well. Foreign leaders in Europe, Asia, and across the world should not have more to say with respect to the U.S. economy than our own citizens and their elected representatives. Thus, our withdrawal from the agreement represents a reassertion of America's sovereignty. (Applause.) Our Constitution is unique among all the nations of the world, and it is my highest obligation and greatest honor to protect it. And I will.

Staying in the agreement could also pose serious obstacles for the United States as we begin the process of unlocking the restrictions on America's abundant energy reserves, which we have started very strongly. It would once have been unthinkable that an international agreement could prevent the United States from conducting its own domestic economic affairs, but this is the new reality we face if we do not leave the agreement or if we do not negotiate a far better deal.

The risks grow as historically these agreements only tend to become more and more ambitious over time. In other words, the Paris framework is a starting point -- as bad as it is -- not an end point. And exiting the agreement protects the United States from future intrusions on the United States' sovereignty and massive future legal liability. Believe me, we have massive legal liability if we stay in.

As President, I have one obligation, and that obligation is to the American people. The Paris Accord would undermine our economy, hamstring our workers, weaken our sovereignty, impose unacceptable legal risks, and put us at a permanent disadvantage to the other countries of the world. It is time to exit the Paris Accord -- (applause) -- and time to pursue a new deal that protects the environment, our companies, our citizens, and our country.

It is time to put Youngstown, Ohio, Detroit, Michigan, and Pittsburgh, Pennsylvania -- along with many, many other locations within our great country -- before Paris, France. It is time to make America great again. (Applause.) Thank you. Thank you. Thank you very much.

Thank you very much. Very important. I'd like to ask Scott Pruitt, who most of you know and respect, as I do, just to say a few words.

Scott, please. (Applause.)

ADMINISTRATOR PRUITT: Thank you, Mr. President. Your decision today to exit the Paris Accord reflects your unflinching commitment to put America first.

And by exiting, you're fulfilling yet one more campaign promise to the American people. Please know that I am thankful for your fortitude, your courage, and your steadfastness as you serve and lead our country.

America finally has a leader who answers only to the people -- not to the special interests who have had their way for way too long. In everything you do, Mr. President, you're fighting for the forgotten men and women across this country. You're a champion for the hardworking citizens all across this land who just want a government that listens to them and represents their interest.

You have promised to put America First in all that you do, and you've done that in any number of ways -- from trade, to national security, to protecting our border, to rightsizing Washington, D.C. And today you've put America first with regard to international agreements and the environment.

This is an historic restoration of American economic independence -- one that will benefit the working class, the working poor, and working people of all stripes. With this action, you have declared that the people are rulers of this country once again. And it should be noted that we as a nation do it better than anyone in the world in striking the balance between growing our economy, growing jobs while also being a good steward of our environment.

We owe no apologies to other nations for our environmental stewardship. After all, before the Paris Accord was ever signed, America had reduced its CO2 footprint to levels from the early 1990s. In fact, between the years 2000 and 2014, the United States reduced its carbon emissions by 18-plus percent. And this was accomplished not through government mandate, but accomplished through innovation and technology of the American private sector.

For that reason, Mr. President, you have corrected a view that was paramount in Paris that somehow the United States should penalize its own economy, be apologetic, lead with our chin, while the rest of world does little. Other nations talk a good game; we lead with action -- not words. (Applause.)

Our efforts, Mr. President, as you know, should be on exporting our technology, our innovation to nations who seek to reduce their CO2 footprint to learn from us. That should be our focus versus agreeing to unachievable targets that harm our economy and the American people.

Mr. President, it takes courage, it takes commitment to say no to the plaudits of men while doing what's right by the American people. You have that courage, and the American people can take comfort because you have their backs.

Thank you, Mr. President.

END

4:03 P.M. EDT

---The White House • 1600 Pennsylvania Avenue, NW • Washington DC 20500 • 202-456-1111

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Wehrum, William L.
Sent: Wed 6/14/2017 8:58:54 PM
Subject: Call

Ryan – Would you please give me a call when you have a chance.
Thanks.

Ex. 6 - Personal Privacy

HUNTON & WILLIAMS **Bill Wehrum**

Partner

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p 202.955.1637

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To: Jackson, Ryan[jackson.ryan@epa.gov]; Dravis, Samantha[dravis.samantha@epa.gov]; Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]; Bolen, Brittany[bolen.brittany@epa.gov]; Konkus, John[konkus.john@epa.gov]
From: Myron Ebell
Sent: Thur 6/15/2017 9:34:04 PM
Subject: Rob Gordon: Exposing the EPA's Gold King Mine Cover-up

I think Rob's comment to me is correct: If EPA gets away with this under the new administration, they will feel invincible. If it is exposed, it will add steam for reform.

Rob spent hundreds of hours investigating the Gold King Mine disaster and scandalous cover-up when he was staff director of the House Natural Resources Committee's oversight and investigations subcommittee. He may be reached at Robert.Gordon@heritage.org.

<http://dailysignal.com/2017/06/14/exposing-epas-gold-king-mine-cover/>

Politics

Commentary

Exposing the EPA's Gold King Mine Cover-Up

Robert Gordon / June 14, 2017 / comments



The EPA has sought to avoid responsibility for the Gold King Mine disaster, which caused 3 million gallons of toxic water to spill into the Animas River in 2015. (Photo: Jerry McBride/The Durango Herald/Polaris /Newscom)

Commentary By

[Robert Gordon](#)

Rob Gordon is a senior research fellow at The Heritage Foundation and has researched, testified, and written on endangered species, property rights, the federal

estate, and other environmental issues. He previously served as staff director for the Subcommittee on Oversight and Investigations of the House Committee on Natural Resources.

Does the Environmental Protection Agency care more about its image than it does about the environment?

Its behavior in response to the massive 2015 Gold King Mine disaster in Colorado would suggest a very clear “yes.”

The Environmental Protection Agency is hiding its incredible recklessness in the affair by giving official accounts that are clearly contradicted by ample evidence in the government’s possession.

As the new EPA administrator, Scott Pruitt has an opportunity to drain a bit of the swamp by exposing the EPA’s cover-up.

Americans need an alternative to the mainstream media. But this can’t be done alone.
[Find out more >>](#)

An Environmental Disaster

In August 2015, an EPA crew inexplicably dug out the rock and rubble “plug” to the long abandoned Gold King Mine, triggering a massive blowout that flooded the Animas River with 3 million gallons of acid mine drainage and, according to the EPA, over 550 tons of metals.

Had the EPA actually been doing what it claims it did, the disaster would never have happened. However, it seems the EPA could not allow its reputation to be tarnished with the truth.

The EPA has put forth the fiction that its crew had simply removed backfill that was blocking access to a mine tunnel, but did not disturb the natural plug that had formed in the tunnel’s opening that was holding back a sea of acid mine drainage.

The EPA claims its crew planned to wait for experts who would address the plug. It says its team was just further cleaning up the site when, through some inexplicable bad luck, the plug eroded, causing a blowout that turned the Animas River bright orange.

In essence, the agency wants us to believe that this was an accident that could have happened to anybody.

The truth the EPA is concealing is that its team did not stop after excavating to the tunnel’s opening, and never had any intention of stopping.

The EPA crew began removing the plug as it had planned, even though it anticipated acid mine drainage would flow out and that the drainage could be pressurized.

The EPA's actions could be likened to poking a balloon with a pin to let out just a little air. At best, the EPA's actions were incredibly reckless.

Numerous federal officials in and outside the EPA turned a blind eye to the truth, and never challenged the fiction that the EPA maintains to this day and that was just repeated Monday by the EPA's inspector general.

For an agency more concerned about its own welfare than its environmental mission, the almost unfathomable incompetence is sufficient motive to cover up what really happened.



Gina McCarthy presided over the Gold King Mine disaster as EPA administrator. (Photo: Jim Lo Scalzo/EPA/Newscom)

There are other reasons as well. Some grossly negligent acts can be criminally prosecuted under provisions the Clean Water Act—a measure the EPA has used against private parties in the past. Additionally, New Mexico has already brought a lawsuit seeking damages.

Further, the EPA's dishonest actions after the fact likely provide even more impetus to continue the deception.

Given the contradictory assertions they have made in public and the bogus reports they have produced for public and congressional consumption, it is difficult to imagine how the EPA officials involved could have possibly been honest with the inspector general investigators.

Pruitt's team has inherited a tangle of half-truths, misdirection, and deceit. Like the Gold King Mine disaster itself, this is a mess the agency needs to clean up.

A Prelude to Disaster

Years before the Gold King Mine disaster occurred, there had been a collapse within a tunnel (an adit) used to access, ventilate, and drain the mine's inner content.

Water can naturally accumulate within mines, and if there has been a collapse, fine solid matter like clay can eventually fill all the spaces between the collapsed rock, forming a natural plug. Eventually a pool of water forms behind the plug, and with enough time there can be so much water that it becomes pressurized.

In 2009, after this collapse, a pipe had been inserted into the mine in an attempt to prevent the accumulation of water. Then, the old structure at the entrance to the adit (posts and timbers supporting a roof to protect from debris sliding down from the slope above) was demolished, and the area in front of the mine opening was backfilled, burying all except the end of the drainage pipe.

Subsequently, water flowing from the mine had slowed to a trickle, a possible indicator that the mine was plugged.

When the EPA crew came to the mine in 2015, it came specifically to address the concern about conditions that could lead to a blowout.

The crew, however, was operating under outlandish assumptions that the agency had made one year before, which are covered in greater detail by a congressional committee [report](#).

In brief, based on almost no evidence, the EPA had concluded during a visit in 2014 that the floor of the mine was 6 feet lower than the ground immediately outside the mine.

It assumed that water in the mine would have to be over 6 feet deep before it would flow out of the pipe. Seeing little flow out, it conjectured the backfilled mine was only half-full and not pressurized.

This conclusion was contrary to available old photographs, documents from the Colorado's Division of Reclamation, Mining and Safety, and the basic fact that the

tunnel was designed in part to drain the mine—so recessing the floor 6 feet would make no sense.

The ground immediately outside the mine was made of the waste rock removed to create the tunnel. Why and how would a tunnel be dug so it couldn't drain or be accessed?

An additional clue should have been clear to the crew: During a 2014 visit, the EPA removed a stinger—a pipe that is used to drive through a collapse to drain impounded water.

This is especially true given that when the crew yanked the stinger from the rubble, it found the front section mangled, indicating there had possibly been an unsuccessful attempt to penetrate a blockage.

In any case, whether the mine was full or not could have been determined by drilling to test for hydrostatic pressure. However, because drilling was difficult and expensive, the EPA chose to rely on faulty assumptions rather than data.

In 2015, the EPA crew set about removing unconsolidated backfill (material that was not holding back water) to reach the plugged tunnel opening cut into the mountain's rock face. This was accomplished the first day of digging.

The crew's outlandish assumptions were proven to be just that when it reached the tunnel's opening. It had exposed the entire plug from the bottom to the top of the tunnel, not just the upper half.

With the tunnel not recessed as anticipated, the crew should have realized, and likely did, that the basis of its assumption that the mine was not full of water had evaporated.

In what appears to have been a hopeless effort to account for this, the following day, the EPA crew reburied all but the very top portion of the plug. It built a large mound of earth (a berm) in front of the tunnel opening and constructed a makeshift channel to the side.

The crew apparently anticipated that when it dug a hole into the top of the plug, any water that came out would calmly flow through the channel and to a pre-existing ditch that ran down the mountain to settling ponds.

Hope springs eternal.



The Animas River, which was contaminated by the spill, serves as a vital water source for parts of Colorado, New Mexico, and the Navajo Nation. (Photo: EPA/Zuma Press/Newscom)

Although the EPA fails to mention the reburying of the plug in any of its reports, several executive branch reports, along with an EPA inspector general report released this week, described what supposedly happened next.

All these reports are wrong, and most, if not all, are intentionally deceitful.

Rewriting History

First, the EPA produced a report that asserted its crew was just digging to clear the bedrock face, but not touching the plug. Then, somehow, the lower bedrock crumbled

and the mine just blew out.

The Department of the Interior produced the next report, a bureaucratic treatise that says the EPA crew discussed a plan, but then ambiguously states “the contractor continued to excavate.”

Exactly what the crew was excavating—the dirt above the tunnel opening (which in fact had already been removed) or the plug itself—is left unsaid. The report asserts that the EPA crew planned to insert another stinger through the now-exposed plug to drain the mine.

The crucial fact omitted by the report is that the EPA did not have a stinger. So, the plan was pure fiction.

In fact, the Department of Interior report was so short on details that an Army Corps of Engineers peer-reviewer made his signature conditional on including additional text in the executive summary.

He included the line:

The report discusses field observations by EPA (and why they continued digging), but does not describe why a change in EPA field coordinators caused the urgency to start digging out the plug rather than wait for [Bureau of Reclamation] technical input as prescribed by the EPA project leader.

Unlike the Corps reviewer’s comments, the remainder of the Interior report is nebulous.

Then, the night before a congressional hearing on the Interior report, the EPA issued an addendum to its first report, stating that the report was based on an unrecorded, untranscribed, simultaneous interview of the two EPA on-scene coordinators in charge of the site.

According to the addendum, the on-scene coordinator who was on vacation at the time of the blowout had handed supervision off to the other, along with an emailed list of instructions.

Curiously, this critically important email was not mentioned in the narrative of the two earlier reports. The email provides explicit instructions on steps to take to remove the upper portion of the plug.

The EPA’s midnight addendum also asserts that its crew was following these instructions with one exception. Without any supporting evidence whatsoever, the report claims that after he sent the email, the on-scene coordinator who would be on vacation told his replacement not to remove the plug, something inconsistent with his instructions.

Even if this supposed “clear verbal direction” was ever given, it definitely wasn’t followed.

The report goes on to repeat the fiction that the EPA crew was digging high above the tunnel opening and preparing the site for when the experts would arrive when, somehow, the mine inexplicably burst open.

Finally, the EPA Inspector General’s Office released its report this Monday that at best demonstrates an inability to uncover the truth by repeating the fiction.

After omitting any serious discussion of the outlandish assumptions from the EPA’s 2014 site visit, the EPA inspector general repeats the official EPA line, stating that:

According to the [on-scene coordinator] on-site, the team stopped excavation in front of the blockage on Aug. 4, 2015, after they reached material that was compacted, well consolidated, and considered by the [on-scene coordinator] on-site to be the blockage.

The EPA inspector general goes on to state that the next day, “[t]he excavator operator built a ramp to enable reaching higher.” This was reportedly done so the excavator operator could “scratch” above the mine entrance where the plug was.

Like the other reports, the inspector general omits any mention that the plug that had been unearthed the day before was reburied—as is demonstrated in this series of photos—and that the rock face had already been “scratched” clean before the blowout, as demonstrated in this series of photos.

Time for Truth and Accountability

All these reports are clearly refuted by an email from the Department of Interior recently released by the House Committee on Natural Resources, which states:

On 8/5/2015, the EPA was attempting to relieve hydrologic pressure behind a naturally collapsed adit/portal of the Gold King Mine. The EPA’s plan was to slowly drain and treat enough mine water in order to access the inner mine working and assess options for controlling its discharge. While removing small portions of the natural plug, the material catastrophically gave-way and released the mine water.

This document, site photographs, and other information clearly contradict the fiction that the EPA has spun. The cover-up is so bold it fits the old saying, “Who you going to believe, me or your lying eyes?”

While the EPA crew did not snap a photo of the excavator bucket that was digging the last fateful scoop of the plug, it might as well have.

There are enough people inside the agencies that know the truth, and a trail of pictures and papers show that they know it.

It is time the cover-up be uncovered, and the EPA be exposed for caring more about its own institutional interests than protecting the quality of the environment.

Myron Ebell

Director, Center for Energy and Environment

Competitive Enterprise Institute

1310 L Street, N. W., Seventh Floor

Washington, DC 20005, USA

Tel direct: (202) 331-2256

Tel mobile: Ex. 6 - Personal Privacy

E-mail: Myron.Ebell@cei.org

Stop continental drift!

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Rebecca Benn
Sent: Tue 6/6/2017 2:14:35 PM
Subject: Congratulations & New Info

Hi Ryan – Congratulations on your new(ish) position...I can't wait to hear what the transition has been like!

I wanted to let you know that I left CSX a few months ago and recently joined Ballard Partners. My new contact info is below, and I look forward to working together again. Let me know if you have any free time to grab coffee or a beer.

Take care,

Rebecca

Rebecca Benn

BALLARD | PARTNERS

Ballard Partners

601 Thirteenth St, NW, Suite #200 N
Washington, DC 20005
P: 202.800.5620
F: 202.800.5623

rebecca@ballardfi.com

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Ex. 6 - Personal Privacy
Sent: Wed 6/14/2017 6:22:40 PM
Subject: Region 5
Ex. 6 - Personal Privacy pdf

Ryan,

Good to talk to you last evening. Attached please find my resume. Please send me some dates and times for us to have a discussion about the Region 5 Administrator position.

Thank you,

Ex. 6 - Personal Privacy

To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Michael Catanzaro[Ex. 6 - Personal Privacy] Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
From: Marc Himmelstein
Sent: Wed 6/14/2017 5:46:58 PM
Subject: Re: meeting

Ok, how-they can be in town whenever
Thx

Sent from my iPad

> On Jun 14, 2017, at 1:45 PM, "Jackson, Ryan" <jackson.ryan@epa.gov> wrote:

>

> Yes.

>

> -----Original Message-----

> From: Marc Himmelstein [mailto:Marc_Himmelstein@nes-dc.com]

> Sent: Wednesday, June 14, 2017 12:14 PM

> To: Jackson, Ryan <jackson.ryan@epa.gov>

> Cc: Michael Catanzaro [Ex. 6 - Personal Privacy]

> Subject: meeting

>

> Is it possible to set up a meeting with you and Mandy with QEP Recall that the Administrator at AXPC suggested that he wanted to meet-it is not necessary to include him Appreciate your help Thx

>

> Sent from my iPad

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Government Executive
Sent: Thur 6/8/2017 2:00:03 PM
Subject: Benefits Cuts and the President's Budget

Is this email not displaying correctly? [View it in your browser](#)

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Dear Ryan,

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To: Jackson, Ryan[jackson.ryan@epa.gov]; Thawley, Cosimo[Cosimo.Thawley@environment.gov.au]
From: Hocking, Jillian
Sent: Mon 6/12/2017 10:07:30 PM
Subject: RE: thank you for your time [SEC=UNCLASSIFIED]

You're most welcome Ryan.

I have confirmed your call to the Canberra office phone for 8:30am Wednesday 14 June 2017 AEST (which I believe is 6:30pm 6/13/17 your time in DC).

Please let me know if there are any issues.

Kind regards

Jill

Jillian Hocking
Departmental Liaison Officer | Office of the Hon Josh Frydenberg MP
Minister for the Environment and Energy
a: Parliament House, Canberra, ACT 2600
t: (02) 6277 6301 | **m:** Ex. 6 - Personal Privacy | **e:** jillian.hocking@environment.gov.au

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Tuesday, 13 June 2017 7:48 AM
To: Hocking, Jillian <Jillian.Hocking@environment.gov.au>; Thawley, Cosimo <Cosimo.Thawley@environment.gov.au>
Subject: thank you for your time

Jillian, it was a pleasure to speak with you and thank you for your help. I wanted to see if we could set up a time for a call between Cosimo and I possibly for tomorrow morning around 8:30am Australia time which would be about 7:30pm U.S. eastern time.

I'm happy to call at the Canberra office phone number.

Much appreciated.

Ryan.

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Stacey Dion
Sent: Fri 6/9/2017 8:25:52 PM
Subject: Carlyle Group-MEETING REQUEST

Hi Ryan,

I hope this email finds you well and enjoying agency life-congrats again!

As I mentioned, I moved over from Boeing to Carlyle approximately 3 months ago. Working in a completely different industry has been great and the issues change every day.

A key portfolio company, Philadelphia Energy Solutions, recently reached out regarding RFS and the impact it is having overall (jobs, improvements, etc.). I know you cannot discuss the reg, but I am hoping you have a few minutes in the coming weeks to meet with representatives of the company's leadership so they can provide you with some additional information regarding their business.

Thanks for considering and best wishes!

Stacey

Stacey Dion

Managing Director, External Affairs

The Carlyle Group

202.729.5731

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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: C Boyden Gray
Sent: Wed 6/14/2017 4:10:12 PM
Subject: RE: Communications Role: [Ex. 6 - Personal Privacy] Resume

You're welcome. Thank you for setting one up.

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Monday, June 12, 2017 12:15 PM
To: C Boyden Gray <cbg@cboydengray.com>
Subject: Re: Communications Role: [Ex. 6 - Personal Privacy] Resume

Thank you. We will reach out and interview him. Thanks for your consistent help.

Ryan.

Ryan Jackson

Chief of Staff

U.S. EPA

[Ex. 6 - Personal Privacy]

On Jun 12, 2017, at 12:13 PM, C Boyden Gray <cbg@cboydengray.com> wrote:

I am passing along the attached resume of a qualified candidate looking for a communications position.

<Resume [Ex. 6 - Personal Privacy]>

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Liz Roche
Sent: Thur 6/1/2017 9:00:46 PM
Subject: RE: Invitation: Energy Dinner & Discussion | Wednesday, June 28

Ryan- Wanted to circle back on my email below regarding a dinner and discussion on June 28. Discussion will focus on issues shaping our energy future (i.e., comprehensive tax reform, investment in energy infrastructure, reliability and security of the grid, etc.).

Let me know if you're interested in attending.

Thanks,

Liz

From: Liz Roche
Sent: Tuesday, May 30, 2017 11:16 AM
To: 'jackson.ryan@epa.gov' <jackson.ryan@epa.gov>
Subject: Invitation: Energy Dinner & Discussion | Wednesday, June 28

Hi Ryan-

Hope you had a great holiday weekend. I wanted to reach out and invite you to an energy dinner and discussion on **Wednesday, June 28 from 6:30-8:30 p.m.** The dinner will bring together Hill, industry and media influencers to discuss **issues shaping our energy future (i.e., comprehensive tax reform, investment in energy infrastructure, reliability and security of the grid, etc.)**, including what's next on the policy agenda.

This seated dinner is 100 percent off-the-record and serves as a catalyst for future discussions—connecting the right people to move our energy policy forward. We've also worked with Lavagna to offer a family-style menu so that each person's bill will not exceed \$50 (including food, drinks, tax, tip, etc).

For your convenience, below are additional details about the time and location.

Best,

Liz

Liz Roche

Assistant Vice President

Liz.roche@storypartnersdc.com

O: 202 706-7816 C: Ex. 6 - Personal Privacy

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ENERGY & THE PATH FORWARD

DINNER & DISCUSSION

Join fellow policy, industry, and media influencers for an intimate dinner and discussion on issues shaping our energy future including what's next on the policy agenda.

WEDNESDAY, JUNE 28



Cocktails
6:30 – 7:00 PM



Dinner &
Discussion
7:00 – 8:30 PM

Lavagna
539 8th Street SE | Washington, DC 20003

RSVP at RSVP@StoryPartnersDC.com

Questions? Contact us at 202.706.7800

These gatherings are informal and 100% off-the-record.

Note: In accordance with government ethics office rules, a set dinner menu has been created for \$50pp including beverages, tax and gratuity.

To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
From: Alexandra Dapolito Dunn
Sent: Mon 6/5/2017 1:20:50 PM
Subject: Re: Roundtable June 19
July 18 Draft EPA ECOS Leadership Agenda.docx

Great; here's a draft agenda for the 18th so you can see how much flexibility we have for fitting something in like this. Been working with Robin Richardson & Andrea Barbery on the agenda.

Alexandra Dapolito Dunn, Esq.

Executive Director & General Counsel

Environmental Council of the States

50 F Street, NW, Suite 350

Washington, DC 20001

202-266-4929 (T); Ex. 6 - Personal Privacy (C); 202-266-4937 (F)

adunn@ecos.org; Twitter @ECOSates

See my research: <http://ssrn.com/author=1356207>

Save the Date! ECOS' State Environmental Protection (STEP) Meeting, 7/17/17,
Washington, DC, www.ecos.org

On Sun, Jun 4, 2017 at 4:31 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

I just wanted to put it initially on your radar so you know and know it's part of a kind of series of meetings. We'll get back in touch with you.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 4, 2017, at 4:24 PM, Alexandra Dapolito Dunn <adunn@ecos.org> wrote:

Sounds great. We have a 3.5 hour meeting at HQ for the ECOS leadership - July 18 - already have the Green Room held and a half hour of the Administrator's time. How long would you want for this conversation? I'm sure we could fit it into this agenda quite well - the agenda is not set yet. Who would you like me to follow up with?

Sent from my iPhone

On Jun 4, 2017, at 2:49 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Alex, attached is an invite I sent to utilities to invite them to a roundtable to discuss next steps after the CPP. I would like to incorporate something like this into the July ECOS meeting if that makes sense. Let me know when would be convenient to talk about that. We can hold it wherever you're holding the ECOS meeting instead of at the EPA, of course, as well.

From: Jackson, Ryan

Sent: Sunday, June 4, 2017 2:20 PM

To: Jackson, Ryan <jackson.ryan@epa.gov>

Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; 'Catanzaro, Michael J. EOP/WHO' <[REDACTED] Ex. 6 - Personal Privacy [REDACTED]>; Schwab, Justin <schwab.justin@epa.gov>; Hupp, Sydney <hupp.sydney@epa.gov>

Subject: Roundtable June 19

All --

Thank you for your interest, participation, and your help in coordinating your trade association members' participation in the round table with US EPA Administrator Scott Pruitt to discuss a regulatory path forward for the utility sector. Having an open and robust dialogue with the regulated community is a foundational component of setting meaningful and balanced environmental standards. We look forward to learning more about your perspective as the utility sector not only powers our economic growth, but is also at the forefront of developing a more efficient and cleaner energy future.

The roundtable will start at 1 pm on June 19 at the US EPA headquarters in the Green Room in the Administrator's Suite. We will follow up with an official agenda in the coming days. We have received a number of RSVP's and appreciate that. Please confirm your attendance or the attendance of your trade association members by June 12. Should you have any questions, please email or call at [REDACTED] Ex. 6 - Personal Privacy [REDACTED]

Sincerely,

Ryan

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy



E C O

Agenda for ECOS-EPA Leadership Meeting

July 18, 2017

8:30 am – 12 pm, Rachel Carson Green Room,
EPA North

Please Arrive by 8:00 am to Facilitate Security Process

Light Continental Breakfast & Coffee Available From ECOS On Site

8:30 – 9:00 **Introductions and Welcoming Remarks.** Discussion of meeting purpose: to focus on how EPA and ECOS can work together to improve environmental results, Administrator Pruitt's priorities and goals.

- **E. Scott Pruitt**, Administrator, U.S. Environmental Protection Agency
- **John Linc Stine**, Commissioner, Minnesota Pollution Control Agency & ECOS President

9:00 – 10:00 **Cooperative Federalism.** A national conversation is underway as to the best and highest purpose for state and federal environmental regulators from 2017 forward. Robust discussion around how a recalibration of state and federal roles and resources can lead to more effective environmental management at lower cost is front and center. ECOS has answered the call for a novel approach to cooperative federalism through development of a policy paper, campaign, and full day meeting on Reframing Our Environmental Future. This portion of the agenda will continue this important dialogue.

Discussion Leaders:

- **EPA?**
- **Todd Parfitt**, Director, Wyoming Department of Environmental Quality & ECOS Vice President
- **Martha Rudolph**, Director, Environmental Programs, Colorado Department of Public Health and the Environment & ECOS Past President

10:00 – 10:30 Networking Break

10:30 – 11:00 **ECOS Environmental Results Project.** At ECOS' Fall Meeting (September 11-12, 2017), ECOS will release its *State Results* project to accomplish several goals – among them, telling the state environmental progress story, showing that ambient environment is progressing and that improvement is possible, and better informing stakeholders about their environment. Discussion will provide a preview of the *State Results* project to date, and opportunities to collaborate with EPA on the effort.

Discussion Leaders:

- **Pat Stevens**, Administrator, Division of Environmental Management, Wisconsin Department of Natural Resources & Chair, ECOS Planning Committee
- **Bill Ehm**, Division Administrator, Iowa Department of Natural Resources & Vice Chair, ECOS Planning Committee

11:00 – 11:40 **Priority Executive Orders and Rulemakings.** The Administration has several important rulemakings and responses to Executive Orders underway. State input is valuable to these endeavors. This discussion will provide an opportunity to discuss issues of national import and significance as well as a forum for state engagement.

Discussion Leaders:

- *EPA?*
- *Becky Keogh*, Director, Arkansas Department of Environmental Quality & ECOS Secretary-Treasurer

11:40 – 12:00 **Next Steps & Adjourn**

Discussion Leaders:

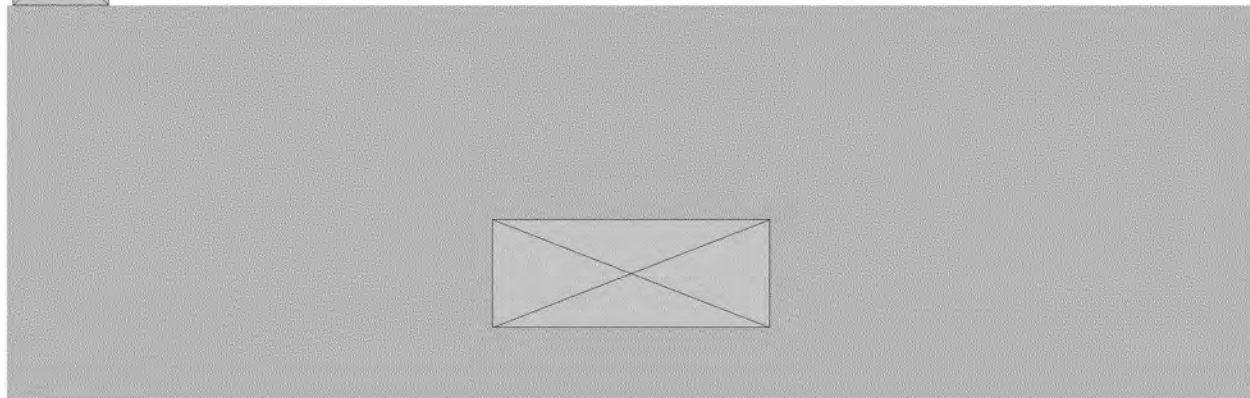
- *John Linc Stine*
- *EPA?*

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Green Guy Media
Sent: Wed 6/7/2017 2:02:57 PM
Subject: ☐ Green Guy Newsletter: June 7 ☐ Rex Hamre,JLL, ATL Braves SunTrust Park

• • • • •

• • •





To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Moore, James D
Sent: Wed 6/7/2017 1:55:43 PM

Hey Ryan,

Just tried your office. Have 2 mins to chat? Thanks.

Jamie D. Moore

Director Federal Government Affairs

Tesoro Companies, Inc.
601 Pennsylvania Avenue N.W.

Suite 850

Washington, D.C. 20004

(202) 803 5960 office

Ex. 6 - Personal Privacy cell

To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Michael Catanzaro[Ex. 6 - Personal Privacy] Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
From: Marc Himmelstein
Sent: Thur 6/15/2017 7:35:43 PM
Subject: Re: meeting

Shane Schulz of QEP will be in town on June 27 and 28
Is it possible to schedule time either of those days
Thanks

Sent from my iPad

> On Jun 14, 2017, at 1:45 PM, "Jackson, Ryan" <jackson.ryan@epa.gov> wrote:

>

> Yes.

>

> -----Original Message-----

> From: Marc Himmelstein [mailto:Marc_Himmelstein@nes-dc.com]

> Sent: Wednesday, June 14, 2017 12:14 PM

> To: Jackson, Ryan <jackson.ryan@epa.gov>

> Cc: Michael Catanzaro [Ex. 6 - Personal Privacy]

> Subject: meeting

>

> Is it possible to set up a meeting with you and Mandy with QEP Recall that the Administrator at AXPC suggested that he wanted to meet-it is not necessary to include him Appreciate your help Thx

>

> Sent from my iPad

To: 'Mathis, Josh'[Josh.Mathis@mail.house.gov]; Jackson, Ryan[jackson.ryan@epa.gov]
From: Stacey Dion
Sent: Fri 6/9/2017 8:02:32 PM
Subject: RE: Carlyle Group

Thanks, Josh!

Ryan, I will email you separately. Congratulations! We met before when I worked for Boeing and have only been at Carlyle 3 months.

Regards,

Stacey

Stacey Dion

Managing Director, External Affairs

The Carlyle Group

Ex. 6 - Personal Privacy

From: Mathis, Josh [mailto:Josh.Mathis@mail.house.gov]
Sent: Friday, June 9, 2017 1:00 PM
To: 'jackson.ryan@epa.gov' <jackson.ryan@epa.gov>
Cc: Stacey Dion <Stacey.Dion@carlyle.com>
Subject: Carlyle Group

Ryan –

I'm back with the Frank Lucas running the DC office – spent six years with him at Ag. At any rate, Stacey Dion at Carlyle Group (CC'd) is a good friend of our office. Carlyle owns a refinery

in PA and she's looking to visit with you or some folks at EPA on some RFS issues. I know y'all are drinking from a firehose but Frank would appreciate any direction you could provide Stacey. She'll email you particulars.

Thanks,

Josh Mathis

Senior Advisor

Office of Rep. Frank Lucas

P: (202) 225-5565

E: josh.mathis@mail.house.gov

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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Dean Hingson
Sent: Tue 6/6/2017 1:55:20 PM
Subject: SENATE REPUBLICAN CHIEFS RECEPTION Reminder

Hey bud, as we update our email list with the many recent changes in our alumni network, wanted to make sure you saw this. Hope you can join us.

Dean

From: SENATE REPUBLICAN CHIEFS OF STAFF ASSOCIATION
[mailto:paperlesspost@accounts.paperlesspost.com]
Sent: Tuesday, June 06, 2017 9:23 AM
To: Dean Hingson <DHingson@mc-dc.com>
Subject: SENATE REPUBLICAN CHIEFS RECEPTION Reminder



This is a reminder that our SENATE CHIEFS RECEPTION will take place this Thursday, June 8th at 6:00 PM at THE BEER INSTITUTE, 440 1ST ST NW, SUITE 350.

[Will attend](#) [Will not attend](#)

SENATE CHIEFS RECEPTION
Thursday, June 8th at 6:00 PM
THE BEER INSTITUTE
440 1ST ST NW, SUITE 350
[View card](#)

View Map	Add to Calendar: Google , Outlook , iCal , or Yahoo
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To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]; Dominguez, Alexander[dominguez.alexander@epa.gov]; Patrick Currier[currier@s2cpacific.com]; Missy Mandell (Gmail) [Ex. 6 - Personal Privacy]
From: John Di Stasio
Sent: Wed 6/7/2017 1:30:47 PM
Subject: Re: introduction

Thank you. I will plan to attend as well

John

John Di Stasio
President, Large Public Power Council
1050 Thomas Jefferson St, 5th Floor
Washington, DC 20007
202-298-3723 office
[Ex. 6 - Personal Privacy] cell
john@lppc.org
www.LPPC.org

On Jun 7, 2017, at 9:27 AM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Yes, you're more than welcome.

From: John Di Stasio [mailto:John@lppc.org]
Sent: Wednesday, June 7, 2017 8:20 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Cc: Patrick Currier <currier@s2cpacific.com>; Jackson, Ryan <jackson.ryan@epa.gov>; Missy Mandell (Gmail) [Ex. 6 - Personal Privacy]
Subject: Re: introduction

Mandy

Is it possible for me to participate as well? My schedule will now allow it

Thanks

John

John Di Stasio

President, Large Public Power Council

1050 Thomas Jefferson St, 5th Floor

Washington, DC 20007

202-298-3723 office

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john@lppc.org

www.LPPC.org

On Jun 5, 2017, at 10:01 AM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

Great – thank you.

From: John Di Stasio [<mailto:John@lppc.org>]

Sent: Monday, June 5, 2017 9:47 AM

To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>

Cc: Patrick Currier <currier@s2cpacific.com>; Jackson, Ryan
<jackson.ryan@epa.gov>; Missy Mandell (Gmail) <Ex. 6 - Personal Privacy>

Subject: Re: introduction

Mandy

Here you go:

Mark Bonsall, CEO, Salt River Project, Phoenix, LPPC Board Chair

Phil Wilson, CEO, Lower Colorado River Authority, Austin, TX

Steve Wright, CEO, Chelan PUD, Wenatchee, WA

Kevin Nordt, CEO, Grant PUD, Ephrata, WA

And here are their e-mails:

: Bonsall Mark B <Mark.Bonsall@srpnet.com>, "Phil.Wilson@LCRA.ORG"
<Phil.Wilson@LCRA.ORG>, "Wright, Steve" <Steve.Wright@chelanpud.org>,
Kevin Nordt <Knordt@gcpud.org>

Please let me know if you need anything else.

Thank you

John

John Di Stasio

President, Large Public Power Council

1050 Thomas Jefferson St, 5th Floor

Washington, DC 20007

202-298-3723 office

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john@lppc.org

www.LPPC.org

On Jun 2, 2017, at 4:48 PM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

Hey John,

Thank you for your help. Can you send us their email addresses?

Sent from my iPhone

On Jun 1, 2017, at 2:11 PM, John Di Stasio <John@lppc.org> wrote:

Hi Mandy

Thanks again for the invitation for LPPC to participate. We have two CEOs committed and awaiting answers from two others.

Those interested include:

Mark Bonsall, CEO Salt River Project, Phoenix, AZ (Current LPPC Board Chair)

Phil Wilson, CEO Lower Colorado River Authority, Austin, TX

I will update you when I get the final word from the others.

Thank you

John

John Di Stasio

President, Large Public Power Council

1050 Thomas Jefferson St, 5th Floor

Washington, DC 20007

202-298-3723 office

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john@lppc.org

www.LPPC.org

On May 31, 2017, at 10:42 AM, Gunasekara, Mandy
<Gunasekara.Mandy@epa.gov> wrote:

Thank you, Patrick.

John,

Nice to e-meet you. I'm setting up a roundtable with top utility CEOs and the Administrator on June 19th from 1 to 3 pm at EPA HQ. The purpose is to discuss next steps on CPP replacement with key stakeholders. Our current list of tentative attendees is listed below. We'd love to add some of your LPPC members. Please let me know who would be a good candidate to participate and is available as soon as possible.

Also, feel free to give me a call to discuss further. 202-564-2314.

Best,

Mandy

Confirmed:

Nick Akins, AEP

Gerry Anderson, DTE

Warner Baxter, Ameren

Pat Vincent-Collawn, PNM

Chris Crane, Exelon

Leo Denault, Entergy

Tom Farrell, Dominion

Ben Fowke, Xcel

Lynn Good, Duke

Sean Trauschke, OGE

Invited:

Southern Co.

First Energy

NRECA (top 3 to 5)

Basin

TRI-State

APPA (top 3 to 5)

TVA

LGE-KU

LPPC (top 3 to 5)

Vistra - Luminant

From: Patrick Currier [<mailto:currier@s2cpacific.com>]
Sent: Wednesday, May 31, 2017 10:29 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; John Di Stasio <john@lppc.org>
Subject: introduction

Mandy and John,

Wanted to connect you guys. Mandy, meet John Di Stasio, president of the Large Public Power Council and long-time friend and mentor of mine. John, meet Mandy Gunasekara, current senior policy advisor to Administrator Pruitt and all around superstar.

Best,
Patrick

Patrick T. Currier

Partner | S2C Pacific

8730 Wilshire Blvd., Ste. 350 | Beverly Hills, CA | 90211

+1.310.596.5415 | currier@s2cpacific.com

www.s2cpacific.com

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Cathy Stepp
Sent: Tue 6/6/2017 1:30:46 PM
Subject: Checking in

Good morning Ryan! Sending you greetings from Branson Missouri. I have located here now and am ready to report to work when you are ready. Reince has been working on following up on the vetting. Not sure if you guys have heard about any expected timelines? Hope all is going well and I can't wait to become part of the team!
Cathy

Sent from my iPhone

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Sean O'Neill
Sent: Mon 6/12/2017 8:16:32 PM
Subject: AGC CEO Letter to Administrator Pruitt
SS LTR to Scott Pruitt 060817.pdf

Hey Ryan

It's been awhile buddy. Hope you are enjoying your new gig. I wanted to make sure you saw the attached email from AGC CEO Steve Sandherr to Administrator Pruitt outlining several regulatory issues of interest to AGC and a request to have an introductory meeting with Steve and the Administrator. This letter was sent both electronically and through the mail last week but I wanted to make sure I flagged it for you.

Please let me know if you have any questions and thanks for considering the request.

Sean

Sean O'Neill

Senior Director, Infrastructure Advancement

Associated General Contractors of America

Office - 202-547-8892

Cell Ex. 6 - Personal Privacy



June 7, 2017

The Honorable E. Scott Pruitt
Administrator
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Dear Administrator Pruitt:

On behalf of the Associated General Contractors of America (AGC) and its more than 26,000 commercial construction company members, congratulations on your new position. We look forward to working with the U.S. Environmental Protection Agency (EPA) under your leadership to reduce unnecessary regulatory burdens, promote economic growth and job creation, and minimize the impacts of government actions on small businesses. We respectfully request the opportunity to meet with you at your earliest convenience to discuss our respective priorities for the next several years under the Trump administration's regulatory reform agenda.

Indeed, the first 100 days of the Trump administration have been momentous for environmental policy. AGC members have taken heed of President Donald Trump's promise to streamline the infrastructure permitting process. Already President Trump has signed multiple executive orders related to environmental issues and regulatory reforms and issued broad directives meant to expedite environmental reviews for "high priority" infrastructure projects. AGC recently presented the White House and Congress with its new document "Reforms for Improving Federal Environmental Review and Permitting" aimed at speeding up project delivery for critical construction projects, without sacrificing environmental protections.

AGC applauds your quick action in setting up a Regulatory Reform Task Force, as required by President Trump's Executive Order (EO) 13777. Recognizing that this effort is operating in concert with EO 13771, directing EPA to identify two regulations for elimination whenever it seeks to promulgate one new rule, AGC appreciated the recent opportunity to inform your task force on possible opportunities to make existing environmental rules, policies and programs less burdensome (Docket ID: EPA-HQ-OA-2017-0190 – [click here](#) for AGC's submission).

The construction industry plays a key role in the U.S. economy. Ninety-one percent of the construction firms in the United States are small businesses employing fewer than 20 workers. The year-after-year addition of new environmental permits, permissions, approvals and other requirements for construction projects has had unfortunate cumulative effects – such as creating unnecessary inefficiencies, delays and costs. This underscores the need for, and importance of, conducting meaningful reforms to eliminate duplicative, overlapping or contradictory requirements.

It is unclear how EPA will make decisions on which regulations it will target and when that process will get started. AGC would like to speak with you about your priorities, answer questions you may have about the construction industry, and identify areas where we can work together.

AGC looks forward to working with EPA and the U.S. Army Corps of Engineers to provide clarity regarding the scope of federal jurisdiction under the Clean Water Act; AGC supports action to withdraw and re-propose the "Waters of the United States" rule, as appropriate and consistent with law. Notwithstanding, AGC maintains that more modest updates to various EPA programs could provide the biggest long-term boons for construction firms. AGC's comments regarding EPA's evaluation of existing regulations, referenced above, targeted smaller adjustments that could be quickly implemented to reduce burdens and compliance costs, including:

- Update the **federal stormwater permitting program** to:
 - Provide simpler, streamlined permits for small construction "sites" that are minimal risk;
 - Remove the "Minimum Measure #4" (Construction Site Runoff Control Program) from the small Municipal Separate Storm Sewer System (MS4) rules, thereby avoiding duplicate or conflicting erosion and sediment control requirements between local programs and state National Pollutant Discharge Elimination System (NPDES) construction general permits (CGP);
 - Revise the federal MS4 permit "compendium" that currently favors flow-based or treatment-based standards without properly considering cost and feasibility in the field; and
 - Conduct a more complete/accurate cost-benefit analysis for the construction stormwater program (EPA's 2017 CGP was not properly "certified" under the Regulatory Flexibility Act and wrongly relies upon a consolidated information collection request (ICR) that covers the entire NPDES program).
- Allow a **construction jobsite's Stormwater Pollution Prevention Plan (SWPPP)** – required by all CGPs – to also satisfy the agency's **Spill Prevention Control and Countermeasure (SPCC) plan** requirements. Otherwise this is double regulation: both plans address oil storage and spill control, containment and cleanup measures and each plan carries significant costs for the contractor to develop.
- Recognize that OSHA rules prevent the spread of lead-paint dust during all construction and terminate efforts to expand EPA's **Lead Renovation, Repair and Painting (RRP) rules** to cover more buildings.
- Curtail the public's ease of **access to company-specific compliance and enforcement-related data** that fuels citizen suits. AGC has great concerns about this aspect of EPA's Next Generation Compliance Policy.
- Bring back **cooperative Industry-Agency partnership and recognition programs** that encourage prompt discovery and correction of environmental problems and lead to enhanced environmental performance.

I believe we share many of the same goals: to ensure federal environmental rules, policies and programs remain relevant and efficient, accomplish their stated objectives, and impose the least possible burdens on the regulated community. Again, AGC requests a meeting with you to discuss how AGC and EPA can collaborate on these important efforts. Please contact Ashley MacDonald from my staff at Ashley.macdonald@agc.org or f(703) 837-5309 to coordinate scheduling.

Best regards,



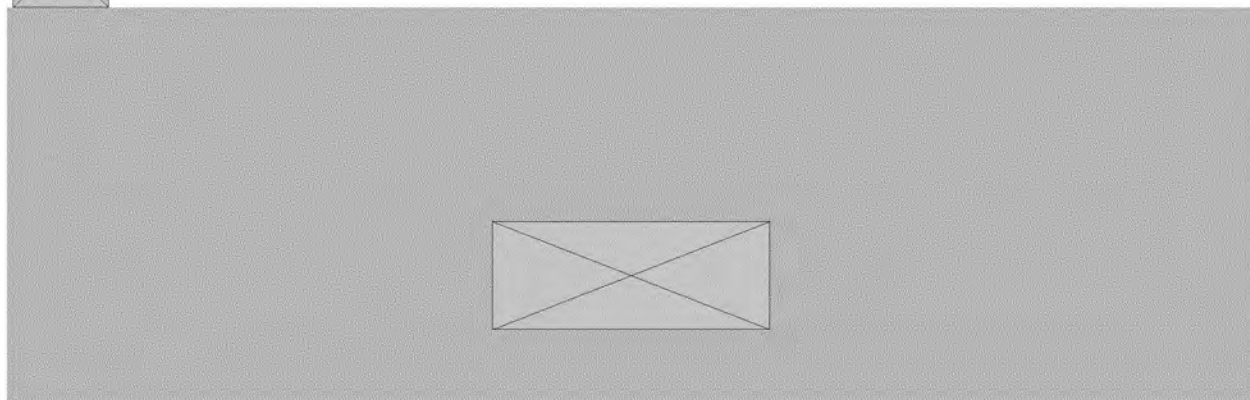
Stephen E. Sandherr

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Green Guy Media
Sent: Wed 6/14/2017 1:11:45 PM
Subject: □ Green Guy Newsletter: June 14 □ Pete Krull,Earth Equity Advisors,Social and Environmental Investing

• • • • •

• •





To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Smith, Keith[Keith.Smith@prime-policy.com]; Black, Charlie[Charlie.Black@prime-policy.com]; Peck, Gregory[Peck.Gregory@epa.gov]
From: Rozsa, Gabe
Sent: Thur 6/15/2017 6:34:19 PM
Subject: New Hanover County Water Issue
[GenX-Health-Effects-Summary-DHHS-6_12_17-PDF.pdf](#)

Ryan,

Thank you for your willingness to assist New Hanover County on this critical water issue. Here some additional background on the matter.

Press reports in early June indicated the existence of the chemical GenX in the drinking water supply of the residents in New Hanover County and other southeast North Carolina counties. New Hanover County, under the leadership of Woody White, Chairman of the County Commission, organized an immediate inquiry and action plan for addressing the concerns of the residents of the Wilmington area about whether the levels found pose any health threat. The local officials are also asking for help from relevant State agencies (see attached Cape Fear Public Utility Authority letter of June 7th). At the County's request, NC Department of Health and Human Services (NC-DHHS) and the North Carolina Department of Environmental Quality (NC-DEQ) have responded to the need for more information about the chemical and its regulation as summarized in the release posted yesterday by NC-DEQ (<http://deq.nc.gov/deq-dhhs-investigating-reports-unregulated-chemical-cape-fear-river>).

I believe North Carolina is a delegated state for water programs but my understanding is that the issue at hand may also involve an earlier enforcement agreement entered into between the previous owner of the facility producing GenX and the EPA. I believe there was a call this week between New Hanover County Officials, NC DEQ and the Atlanta Regional Office of the EPA. Also, detailed questions have been submitted to EPA HQ about this chemical and related enforcement issues.

On Monday, the NC-DHHS released a health effects statement on GenX to county public health directors. The statement, attached above, was prepared for the NC-DEQ by the Occupational and Environmental Epidemiology Branch of NC-DHHS. NC-DEQ and the community at large is working to understand the human health effects of GenX, and the health effects statement. Based on the information available thus far from all sources, NC-DEQ issued a statement summarizing what was known to include the following:

“There are no U.S. regulatory guideline levels for GenX. However, as part of the European chemical registration, a 2-year chronic toxicity and cancer study with rats was performed. They reported a Derived No Effect Level (DNEL) of 0.01 mg/kg bw/day. Based on U.S. risk assessment calculations, this corresponds to a concentration in drinking water of 70,909 ng/L of GenX- more than 100 times greater than the mean value of 631 ng/L detected in the Cape Fear River. Based upon these data, the GenX levels detected in 2013-2014 would be expected to pose a low risk to human health.”

This statement begins to shed light on human health risks from GenX, but it does not eliminate the county’s concern that this unregulated compound has been found in the community’s drinking water supply, especially in light of lower standards established by EPA for related chemicals.

New Hanover County officials are asking that the EPA and DEQ work to provide the residents and the state agencies involved with the best available information about the health threats posed.

Ryan, we appreciate your willingness to help. A statement from your office that you are working quickly and cooperatively with all parties, including New Hanover County elected officials, Members of Congress, NC-DEQ and EPA staff (both Region and HQ), would help ease the concerns in the current climate.

Thank you for your assistance.

Gabe

Gabe Rozsa

Managing Director

1110 Vermont Avenue, NW | Suite 1000 | Washington, DC 20005

202 530 4843 | Fax: 202 530 4800 | Cell: Ex. 6 - Personal Privacy

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Prepared by the Occupational and Environmental Epidemiology Branch, NC DHHS

June 12, 2017

- GenX is a chemical used in the manufacturing of fluoropolymer resins, which are used for nonstick coatings and other purposes. GenX is part of the perfluorinated family of compounds that includes the chemicals PFOS and PFOA. In 2009, GenX was developed as a replacement for PFOA thus limited health information is available for GenX.
 - According to media reports, the GenX in the Cape Fear River is originating from Chemours Co. at Fayetteville Works, a facility 100 miles upstream from Wilmington. GenX has been detected in water treated by the Cape Fear Public Utility Authority as detailed in the article by Sun et al.¹
 - The recent media reports on GenX in the Cape Fear River are associated with the paper written by Sun et al. This paper was published in November 2016. Media reports cite 631 ng/L concentrations of GenX detected in the Cape Fear River. This number is taken from the Sun et al. article based on data from 2013-2014. It is not known whether these levels reflect the current concentrations of GenX in the Cape Fear River.
 - Limited health information is available for GenX. PFOA and PFOS (chemicals that are part of the same family of fluorinated compounds) were recently reviewed by the EPA and the most common effects observed in laboratory tests were kidney and testicular cancer, impaired fetal development, and effects on the liver, thyroid, and immune system. The EPA recently released a Health Advisory with recommendations for drinking water not to exceed 70 parts per trillion (70 ng/L) for PFOS and PFOA combined.²
 - There are no U.S. regulatory guideline levels for GenX. However, as part of the European chemical registration, a 2-year chronic toxicity and cancer study with rats was performed. They reported a Derived No Effect Level (DNEL) of 0.01 mg/kg bw/day. Based on U.S. risk assessment calculations, this corresponds to a concentration in drinking water of 70,909 ng/L of GenX- more than 100 times greater than the mean value of 631 ng/L detected in the Cape Fear River. Based upon these data, the GenX levels detected in 2013-2014 would be expected to pose a low risk to human health.
 - This summary covers GenX only and does not address other poly- or perfluorinated compounds that might be present. This summary is preliminary and subject to change as additional information becomes available.
1. Sun et al. Legacy and Emerging Perfluoroalkyl Substances Are Important Drinking Water Contaminants in the Cape Fear River Watershed of North Carolina. Environmental Science & Technology Letters. Nov 2016. DOI: 10.1021/acs.estlett.6b00398.
 2. USEPA. Drinking Water Health Advisories for PFOA and PFOS. <https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos>

To: Bucci, Kristine A. EOP/WHO Ex. 6 - Personal Privacy Locetta, Jennifer R.
EOP/WHO Ex. 6 - Personal Privacy
Cc: hugh.eby@ic.fbi.gov[hugh.eby@ic.fbi.gov]
From: Dourson, Michael (doursoml)
Sent: Wed 6/7/2017 12:52:32 PM
Subject: Pending EPA Appointment
[Foreign travel+.docx](#)
[Dourson CV UC-2017.doc](#)

Dear Colleagues

Please find attached a revised list of foreign travel in response to my interview with Special Agent Eby yesterday. This more complete listing enhances my response to the Electronic Questionnaires for Investigations Processing (e-QIP) Investigation Request #23126664 (specifically, Section 20B - Foreign Business, Professional Activities, and Foreign Government Contacts), and includes my just completed two international trips, and also trips that were available only on office calendars for which I otherwise did not have access before I left the country on this recent international travel. I also attach a revised resume that includes these two recent trips. This resume can also be used as a replacement to that used for this investigation request.

Special Agent Eby is checking on whether my fingerprints are already available electronically. I have completed the form 278 as of yesterday. Please let me know if you need anything else from my end.

Cheers!

Michael Dourson

-- It is the mark of an instructed mind to rest satisfied with the degree of precision which the nature of the subject permits and not to seek an exactness where only an approximation of the truth is possible. Aristotle



From: Michael Dourson <doursoml@ucmail.uc.edu>
Date: Tuesday, June 6, 2017 at 4:51 PM
To: "hugh.eby@ic.fbi.gov" <hugh.eby@ic.fbi.gov>
Subject: Dourson Foreign Travel

Dear Special Agent Eby

Thanks for taking some time out of your busy day to speak with me. As discussed, attached is a more complete listing of foreign travel going back 15 years. This listing includes my just completed two international trips, and also trips that were available only

on calendars in my office, and that I otherwise did not have access to when I answered the on-line version of the question regarding "Foreign Conferences, Trade Shows, Seminars, and Meetings" at home just before I left the country on the recent international travel.

The Society of Toxicology also sponsored Professor Sri Noegrohati of the Gadjah Mada University of Yogyakarta, Indonesia to visit our nonprofit Toxicology Excellence for Risk Assessment (TERA) in 2013. Dr. Bernard Gadagbui of our office and I returned to her university in the spring of 2014 to lecture for a week. The Society of Toxicology sponsored both visits, and neither Dr. Gadagbui or I was otherwise paid for this activity (other than our salary from TERA). Professor Noegrohati's email

is Ex. 6 - Personal Privacy

Please feel free to call with any additional questions.

Sincerely,



Michael L. Dourson, Ph.D., DABT, FATS, FSRA
Professor
Risk Science Center (formerly TERA)
Department of Environmental Health
University of Cincinnati, College of Medicine
160 Panzeca Way
Cincinnati OH 45267-0056

michael.dourson@uc.edu

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(Mondays)

<http://eh.uc.edu/tera/>



CURRICULUM VITAE

Michael L. Dourson, Ph.D., DABT, FATS, FSRA
University of Cincinnati, College of Medicine
160 Panzeca Way
Cincinnati OH 45267-0056

michael.dourson@uc.edu

Ex. 6 - Personal Privacy

(Fridays)

2017

EMPLOYMENT

2017-	Professor. Risk Science Center (aka TERA Center). Department of Environmental Health, University of Cincinnati, College of Medicine, Cincinnati, Ohio
2015-16	Professor and Director. Toxicology Excellence for Risk Assessment Center, Department of Environmental Health, University of Cincinnati, College of Medicine, Cincinnati, Ohio
1995-15	Director/President. Toxicology Excellence for Risk Assessment, Cincinnati, Ohio
1991-94	Chief. Systemic Toxicants Assessment Branch, Environmental Criteria & Assessment Office (ECAO), U.S. Environmental Protection Agency (EPA), Cincinnati, Ohio
1990-91	Associate Director. ECAO, Cincinnati, Ohio
1989-90	Chief. Pesticides and Toxics Team, EPA, Washington, D.C.
1986-89	Chief. Methods Evaluation and Development Staff, ECAO, Cincinnati, Ohio
1985	Leader. Acceptable Daily Intake (ADI) Group, ECAO, Cincinnati, Ohio
1980-84	Staff Toxicologist. ECAO, Cincinnati, Ohio

EDUCATION

1988-89	Executive Potential Program. U.S. Office of Personnel Management
1986-87	Zenger Miller Supervision Course
1985-2015	Diplomate of the American Board of Toxicology
1975-80	University of Cincinnati, College of Medicine, Ph.D. degree in toxicology
1970-74	Wittenberg University, B.A. degree in biology

TEACHING

I have lectured in courses at the graduate level in several universities and institutes; have lectured high school students on the general principles of toxicology over several years; and have talked with grade school students on several occasions about careers in science and my experiences in Africa. I participated as a member of the Ph.D. thesis committee of Dr. Natalia Foronda of the Ministry of Health, New Zealand.

RESEARCH: INVITED PRESENTATIONS (Selected)

“Hazard identification”

“Dose response assessment”

“Exposure assessment”

“Risk characterization”

Ateneo School of Medicine and Public Health. Makati City, Philippines. June 1-2, 2017.

“Risk Assessor Certification”

Taiwan Chapter of the Society for Risk Analysis. Taichung City, Taiwan. May 24, 2017.

“Overview of risk assessment”

“Hazard identification II: Cancer”

“Dose response assessment II: Cancer”

“Introduction to dose response assessment modeling”

“Use of PBPK modeling in risk assessment”

“Risk characterization”

The Regional Training Program on Risk Assessment, Bibliotheca Alexandrina, Alexandria, Egypt, April 24-27, 2017.

“Managing the non-cancer risks a hazardous waste sites: Trichloroethylene (TCE) as a case study”

Association for Environmental Health and Sciences (AEHS) Foundation. San Diego, California March 21, 2017.

“The concept of hormesis and application in risk assessment”

Society of Toxicology, Baltimore, Maryland, March 14, 2017.

“The concept of hormesis and application in risk assessment”

Society for Risk Analysis, San Diego, California, December 12, 2016

“Mechanics of Risk Assessment”

In workshop on Risk Analysis. **Institute for Humane Studies and the Mercatus Center at George Mason University.** Portland, Oregon, June 18th, 2016.

“Yes, ‘Thresholdable’ Carcinogens Are Still Delaney Carcinogens”

Roundtable Session: Is a “Thresholdable” Carcinogen Still a Delaney Carcinogen?

Society of Toxicology, New Orleans, Louisiana, March 14, 2016.

“Distinguishing between Mode and Mechanism of Action, and Some Key Events for MOA”
Colloquium: Role of Mode of Action in Dose-Response Assessment for Carcinogens.

Food and Drug Administration and the Society of Toxicology, College Park, Maryland, February 25, 2016.

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

“Harmonizing OELs: Commonalities and Differences”

Keynote talk at the annual meeting of the **Occupational Toxicology Roundtable**. New Brunswick, New Jersey, October 4, 2015

“Risk assessment and hazard identification for metals”

“Human health case study: mercury exposure and essential metals”

“Human health criteria and standards”

Asian Pacific Economic Conference Workshop on Metals Risk Assessment, Cebu, Philippines on 28-29th August 2015.

“Hepatotoxicity”

“Cardiac Toxicity”

“Hazard Identification/Dose Response”

“Exposure Assessment/Characterization”

International Workshop On Comprehensive Toxicology, Bengaluru, India, July 27-31, 2015.

“Defining the range of the reference dose: imprecision versus uncertainty”

The TCE Revolution and its Permanent Impact on Environmental Due Diligence, EDR Insight, National Teleconference/Webinar. June 24, 2015.

“Assessment and management of Elk River, West Virginia drinking water contamination incident, 2014”

British Toxicology Society Annual Congress, Birmingham, UK, April 20, 2015.

“Hazard & Dose Response Assessment: Roadmaps & Methods for Using 21st Century Data”

Ohio State University, Columbus, Ohio, February 23, 2015.

“Practical Guidance on the Development of a Non-cancer Hazard Range for Effective Risk Assessment and Risk Management of Contaminated Sites: A Case Study with Trichloroethylene and Other Chemicals”

Tri-Service Environmental Risk Assessment Work Group, Naval Medical Center, Portsmouth, VA. Jan. 21, 2015.

“Advances in Assessing Food Additive Safety”

SPI Food, Drug and Cosmetic Packaging Materials Committee. Food Packaging Summit. New Orleans, LA. Nov. 10-12, 2014.

“Mode of Action and Dose-Response Evaluation of the Effect of Partially Hydrogenated Oils on LDL-Cholesterol”

SOT-FDA Colloquia on Emerging Toxicological Science Challenges in Food and Ingredient Safety. Colloquium One. College Park, MD, Live Webcast. Nov. 7, 2014.

“Risk Assessment Roadmaps & Methods for Using 21st Century Data”

International Institute of Synthetic Rubber Producers, Inc. Houston, Texas. Nov. 6, 2014.

“Advances in Assessing Ingredient Safety”

Workshop on GRAS Determinations. International Society of Regulatory Toxicology and Pharmacology. Washington, DC. Oct. 14, 2014.

“Case study #3: Partially Hydrogenated Oils (PHOs)”

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

The Role and Use of Nutritional Studies I Evaluating the Safety of a Food or Ingredient. ILSI North American Special Workshop. Washington, DC. July 22, 2014.

“Dose Response Assessment Boot Camp---Lecture series”

Toxicology Excellence for Risk Assessment (TERA) at Gadjah Mada University, Yogyakarta, Indonesia. June 13-21, 2014.

“Opportunities and Challenges Posed By the Use of ‘omics’ data in Risk Assessment of Mixtures”

Toxicology Risk Assessment Conference (TRAC). Cincinnati, Ohio. April 8, 2014.

“Alliance for Risk Assessment (ARA), EDSP, TCE, Science and Decisions”

Monsanto. St. Louis, MO. April 10, 2013.

“Risk Assessment Roadmaps & Methods for Using 21st Century Data”

Weight of Evidence Workshop. **International Life Sciences Institute (ILSI)** North America Technical Committee on Food & Chemical Safety. Miami, Florida. January 23-24, 2013.

“Advancing human health risk assessment: Charting a Course through committee recommendations”

Society for Risk Analysis Annual Meeting. San Francisco, CA. Dec. 9-12, 2012.

“How Individual Variability is Currently Factored into Risk Assessment/Regulation/Decision Making”

Emerging Science for Environmental Health Decisions. **The National Academies of Science,** Board on Life Sciences, Board on Environmental Studies and Toxicology. Washington, D.C. April 18-19, 2012.

“A Hitchhikers Guide to the Galaxy of Practical Risk Assessment”

Resource sharing, partnering, and cooperative science policy resolution. US EPA and Region V States **Vapor Intrusion Video Conference Roundtable.** Columbus, OH. April 12, 2012.

“Problem formulation to dose response: Advance via the ARA Beyond Science and Decisions workshops”

New England Chapter of the Society for Risk Analysis. Boston, MA. January 24, 2012.

“Risk Analysis on the Coast”

Society for Risk Analysis Annual Meeting. Charleston, SC. Dec. 4-7, 2011.

“Current Environmental Risk Assessment: Getting ready for Century 21”

Association of Government Toxicologists. Washington, D.C. March 29, 2011.

“Risk Assessment”

Global Chemistry. Baltimore, MD. March 22, 2011.

“Peer Review and Consultation Program”

American Chemistry Council. Washington, D.C. Feb. 16, 2011.

“Fishbowl”

Risk 21: Realizing the Future of Risk Assessment Workshop. **International Life Sciences Institute.** Washington, DC. Jan. 11, 2011.

“Draft Toxicological Review of Hexavalent Chromium”

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

Environmental Protection Agency's IRIS listening session. Washington, D.C. November 18, 2010.

"Perspectives of Air Pollutants: Health Effects Research Update Session: Risk"
Clean Air Forum. Houston, TX. Nov. 4, 2010.

"A Risk Assessment and Regulatory Agency Perspective on Mixtures Affecting Susceptible Populations"
Society of Toxicology Annual Meeting. Salt Lake City, Utah. March 6-12, 2010.

"Risk Analysis: The Evolution of a Science"
Society for Risk Analysis Annual Meeting. Baltimore, MD. Dec. 5-10, 2009.

"Environmental Risk in the 21st Century"
International Society of Regulatory Toxicology and Pharmacology. Washington, D.C. Dec. 9, 2009.

"Emerging issues and regulatory challenges and the science of risk assessment"
Keynote talk at the Midwestern States Environmental Consultants Association biannual meeting. Indianapolis, Indiana. November 3, 2009.

"Making a Successful Transition from Government to Non-Profit Sectors"
Society of Toxicology. Baltimore, MD. March 15-20, 2009.

"Exposure, and Risk Data: Ensuring the Best Science"
Society of Toxicology. Baltimore, MD. March 15-20, 2009.

"Scientific Peer Review: An Overview with Reference to the International Toxicity Estimates for Risk (*ITER*) Database"
Society of Toxicology. Baltimore, MD. March 15-20, 2009.

"A Risk Assessment and Regulatory Agency Perspective on Mixtures Affecting Susceptible Populations"
Society of Toxicology. Baltimore, MD. March 15-20, 2009.

"Toxicology Excellence for Risk Assessment"
Environmental Council Of States and Department of Defense Sustainability Workgroup. Washington, D.C. June 20-21, 2007.

"Predicting risk above EPA's Reference Dose (RfD)"
Toxicology and risk assessment conference. **Multiple federal agency sponsors.** Cincinnati, Ohio. April 25, 2007.

"Using human data to protect public health"
Toxicology and risk assessment conference. **Multiple federal agency sponsors.** Cincinnati, Ohio. April 24, 2007.

"A Historical Perspective on Risk Assessment and Areas for Advancement"
Twenty-Eighth Annual Meeting of the **American College of Toxicology.** Nov. 11-14, 2007.

"Air toxics: Risk based analysis"
Symposium on air emission from large industrial sources. Endicott House, **Multiple sponsors.** August 16-17, 2006.

"What Should We Really Be Worried About?"
Michael L. Dourson, Ph.D., DABT, FATS, FSRA

Seafood & Health '05: Issues, Questions and Answers. Session V. Assessing the Real Risks.
Department of Commerce. Washington, D.C. December 2005.

“Future Use of Default Assumptions and Uncertainty Factors”
Michigan State University, Center for Integrative Toxicology. April 8, 2005.

“Mercury Regulation: Fishing For The Facts About Risk”
States and Nation Policy Summit. **American Legislative Exchange Council**. Washington D.C.
December 3, 2004.

“Acceptable Daily Intakes (ADIs) and their Application in the Regulatory Process”
Meeting of the Technical Committee on Food Toxicology and Safety Assessment of the
International Life Sciences Institute. North America. Washington, DC. Nov. 30, 2004.

“Human dose-response assessment of copper”
Science Symposium Update on Science Supporting the EU Voluntary Risk Assessment,
International Copper Association. Rome. May 17, 2004.

“Integration of Toxicity and Molecular Mechanistic Data for Nonlinear Dose-Response
Assessment. Application to Systems Biology and Risk Assessment”
2003 Annual Meeting, **Society for Risk Assessment**. Baltimore, Maryland. December 10, 2003.

“History of *TERA* Coordinated Public/Private Partnership on Perchlorate Research”
Perchlorate State-of-the-Science Symposium. **University of Nebraska, Center for
Environmental Toxicology**. Omaha, Nebraska. September 29, 2003.

“Small Non-Profits in a Big Risk World: Greasing the Wheels of Change”
Featured Meeting Speaker, The **Northern California Chapter of the Society for Risk
Analysis**. September 25, 2003.

“Risk Assessment”
In: ATSDR and RIVM Expert Panel Meeting on Chemical Risk Assessment and Children’s
Health. **ATSDR and RIVM**, Brussels. June 26, 2003.

“Perchlorate Reference Dose (RfD)”
California Environmental Protection Agency. September 26, 2003.

“Differential Sensitivity Of Children And Adults To Chemical Toxicity”
Midwestern States Risk Assessment Symposium. **Indiana Department of Environmental
Management**. Indianapolis, IN. July 25, 2002.

“Modeling Of Population Variability”
Midwestern States Risk Assessment Symposium. **Indiana Department of Environmental
Management**. Indianapolis, IN. July 25, 2002.

“Data Derived Replacement Of Default Uncertainty Factor”
Workshop on modeling of population variability. **Society of Toxicology**. Nashville, TN.
March 19, 2002.

“Stone-Age Toxicity: From Factors of 10 to Compound-Specific Adjustments”
University of Cincinnati Medical Center, Dept. of Environmental Health Seminar. Nov. 2002.

“Does The Use Of Data-Derived Uncertainty Factors Allow Risk Assessors To Describe
Uncertainty More Accurately?”

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

Fifth Annual Workshop on Evaluation of Default Uncertainty Factors in Health Risk Assessment, **New Jersey Medical School**. June 1, 2001.

“Risk Assessment”

HESI Agricultural Chemical Safety Assessment Subcommittee Steering Committee Meeting. **International Life Sciences Institute**. Washington, D.C, April 18, 2001.

“Risk Characterization Framework For Non-Lethal Weapons”

Symposium on comparative risk. **Society for Risk Analysis**. Seattle, WA. December 5, 2001.

“Noncancer Risk Assessment: A 20-Year Perspective”

Ohio Society for Risk Analysis. Noncancer Workshop. Cincinnati. June 13, 2000.

“Approaches to assessing dose response assessment relations”

Chulabhorn Research Institute. Training course on environmental and health risk assessment and risk management of toxic chemicals, Lak si, Bangkok, Thailand. November 21, 2000.

“Guidelines for Application of Data-Derived Uncertainty Factor in Risk Assessment”

Fourth Annual Workshop of Evaluation of Uncertainty Factors in Health Risk Assessment, **New Jersey Medical School**. May 3-4, 2000.

“Determining USEPA Reference Doses (RfDs) for Essential Minerals”

University of Ulster. Nutrition & Toxicology Excellence for Risk Assessment Workshop Series. Northern Ireland. June 18, 1999.

“The Challenges Of Using Common Mechanism Of Toxicity In Chemical Regulation”

Roundtable session. **Society of Toxicology**. New Orleans, LA. March 17, 1999.

“Extrapolating Data From Adults To Set ULs For Children”

Workshop on upper levels of nutrients. **National Academy of Sciences**. January 21, 1999.

Incidence and severity in relation to magnitude of intake: mixed effects, categorical regression”

International Life Sciences Institute. Workshop on the significance of excursions of intake above the ADL. Milan, Italy. April 23, 1998.

“Should there be an international accreditation of toxicologists? Accreditation in the USA”

International Congress of Toxicology. Paris, France. July 8, 1998.

“Quality Issues relating to scientific information”

US. EPA Data Quality and Gaps Workshop. **U.S. Environmental Protection Agency**. Washington, D.C. October 19, 1998.

“Noncancer Risk Assessment: Impact of Research on the Underlying Science”

International Society for the Study of Xenobiotics. Hilton Head, South Carolina. October 26-30, 1997.

“Alternatives to the NOAEL Approach (BMD, probabilistic approach)”

Federal Institute for Health Protection of Consumers and Veterinary Medicine. Workshop on Use of Uncertainty Factors in the Risk Assessment Process - New Directions. Berlin, Germany. May 5-7, 1997.

“Risk Assessment And The Role Of Risk Assessment Guidelines”

Workshop: EPA’s neurotoxicity risk assessment guidelines. **Society of Toxicology**. Cincinnati, Ohio. March 11, 1997.

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

“Noncancer Risk Assessment: Impact Of Research On The Underlying Science”
Symposium V: Cancer and noncancer risk assessment. **International Society for the Study of Xenobiotics**. October 28, 1997.

“Overview: Classical Risk Assessment”
Risk Assessment in Establishing Upper Reference Levels of Nutrients Workshop. **Food & Nutrition Board, Inst. of Medicine**, Washington, DC. July 15-16, 1996.

“ADI, BMD, CEL...The Alphabet Soup of Methods for Dose Response Assessment”
In: Conference on Advances in Toxicology and Applications to Risk Assessment. **ATSDR, U.S. Army, Air Force, Navy and EPA**, Dayton, Ohio. April 25, 1996.

“Overview of EPA’s Reference Dose Methodology”
In: Toxicology Peer Review Board Meeting of the **U.S. Army** Center for Health Promotion and Preventive Medicine. Aberdeen Proving Ground, Maryland. January 18, 1996.

“Non-Cancer Risk Assessment: Three Practical Methods From A Decade Of Research”
In: New Techniques in Risk Assessment. **International Business Communication**. Orlando, Florida. February 15, 1996.

“Evolution of Science-based Uncertainty Factors in Noncancer Risk Assessment”
The 2nd Annual Workshop on the Evaluation of EPA 10X Safety Factors in Health Risk Assessment. **New Jersey Medical School**. Nutley, NJ. December 6, 1996.

“Noncancer Hazard Identification and Dose Response Assessment, Part 2”
In: Risk assessment. **University of Cincinnati, College of Medicine**. April 18, 1996.

“Dose Response Class Exercise: Aroclor”
In: Risk assessment. **University of Cincinnati, College of Medicine**. April 30, 1996.

“Introduction to Risk Assessment”
In: Risk assessment. **University of Cincinnati, College of Medicine**. March 26, 1996.

“Systemic Toxicants, Cross Route Extrapolation, Complex Mixtures”
In: Risk assessment. **University of Cincinnati, College of Medicine**. May 23, 1995.

“On Reference Dose and Its Underlying Toxicity Data Base”
Health Canada. Threshold of Regulation Workshop. Ottawa, Canada. March 28, 1995.

“Presentation of Ongoing Work on Characterization of Distributions of Data which Serve as the Basis for Uncertainty Factor” **Health Canada**. Planning Meeting on Uncertainty Factors. Ottawa, Canada. March 18, 1995.

“Advances in Research Used as an Adjunct to Toxicity Testing: EPA Perspective”
In: Regulatory Update: EPA Regulation and Test Requirements. **American College of Toxicology**. Annual Meeting. Vienna, Virginia. November 12, 1995.

“Alternatives To The RfD: What Are We Getting And How Much Effort Does It Cost?”
Interagency Risk Assessment Committee. **State of New Jersey**. April 25, 1994.

“Panel Discussion”
In: Issues in reproductive and developmental risk assessment-boron toxicity as a test case. Annual Winter **Toxicology Forum**. February 22, 1994.

“Regulatory Considerations of the U.S. EPA”
Michael L. Dourson, Ph.D., DABT, FATS, FSRA

In: Biological effects of low level exposures (BELLE) and potential implications for regulatory decision-making. **American College of Toxicology**. Annual Meeting. October 26, 1994.

“Noncancer Improvements Discussion Panel”

In: Health effects & risk assessment associated with noncarcinogenic, radioactive and mixed waste. **Air & Waste Management Association**. 87th Annual Meeting. June 23, 1994.

“Evaluating Subpopulations: Fish Consumption Advisory Methodology”

In: EPA Workshop on challenges in Risk Characterization. **U.S. Environmental Protection Agency**, Cincinnati. September 8, 1994.

“Inherent Imprecision of RfD”

In: EPA Regional Risk Assessors' Meeting. **U.S. Environmental Protection Agency**, Boston, MA. April 27th, 1994.

“New Methods: Benchmark Dose”

In: EPA Regional Risk Assessors' Meeting. **U.S. Environmental Protection Agency**, Boston, MA. April 26th, 1994.

“Components of Risk Assessment”

In: Risk assessment. **University of Cincinnati, College of Medicine**. March 29, 1994 (This same lecture was also given an additional two times at the Cincinnati State Technical and Community College on September 27th and November 15th).

“How Toxicity Data Are Used in the Process of Hazard Identification and Dose-Response Assessment”

In: Basic Risk Assessment: Current Developments. Continuing Education Course. **Society of Toxicology**. New Orleans, LA. March 14, 1993.

“Modifying Uncertainty Factors for Noncancer Endpoints”

In: Advanced Topics in Risk Assessment. Continuing Education Course. **Society of Toxicology**. New Orleans, LA. March 14, 1993.

“Noncancer Risk Assessment”

In: Course entitled "Introduction to Risk Assessment." **University of Kentucky**. Lexington, Kentucky. July 28, 1993.

“Noncancer Risk Assessment Science”

In: Risk Assessment and the Environment Series. Harvard Center for Risk Analysis. **Harvard School of Public Health**. Boston, MA. February 16, 1993.

“Statistical Research Planning of the Environmental Criteria and Assessment Office”

In: Workshop on Office of Research and Development Statistical Needs. **U.S. Environmental Protection Agency**, Research Triangle Park, North Carolina. May 12, 1993.

“EPA's Integrated Risk Information System”

International Programme on Chemical Safety, World Health Organization. Geneva, Switzerland. June 17, 1993.

“Noncancer Dose-response and Risk Characterization”

In: Course on Environmental Health Risk Assessment. **Nofer Institute of Occupational Health**, Lodz, Poland. March 31, 1993.

“Most Important Problems Encountered in Quantitative Risk Assessment at the National or International Level”

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

In: Meeting on Consultation on Guiding Principles and Methodology for Quantitative Risk Assessment in Setting Exposure Limits. **International Programme on Chemical Safety, World Health Organization**, Langen, Germany. January 19, 1993.

“Risk above the Reference Dose (RfD) Benchmark Dose (BMD)”

In: Conference on the Risk Assessment Paradigm after Ten Years. **U.S. Army, Air Force, Navy and EPA**, Dayton, Ohio. April 7, 1993.

“Benchmark Dose Approach to Risk Assessment”

In: **Federal-State Toxicology and Risk Analysis (FSTRAC)** Fall Meeting. Washington D.C. December 1-3, 1993.

“Overview of Alternatives to Benchmark Dose”

In: Workshop on Benchmark Dose Methodology. Public workshop sponsored by **U.S. Environmental Protection Agency, American Industrial Health Council, and International Life Sciences Institute**. Fairfax, Virginia. September 28-30, 1993.

“Development of RfDs and the IRIS Process”

In: Cincinnati Forum on Dose Response Issues of Risk Assessment for Trivalent and Hexavalent Chromium Salts. **Public workshop sponsored by U.S. Environmental Protection Agency**. Cincinnati, Ohio. August 19, 1993.

“The Use of Threshold Limit Values for Determining Community Standards: Current Issues”

In: Tutorial Session on Threshold Limit Values and Biological Exposure Indices. 11th International System Safety Conference. **Ohio Chapters of both the System Safety Society and the Society for Risk Analysis**. Cincinnati, Ohio. July 29, 1993.

“The IRIS Process”

In: Cincinnati Forum on Boron Containing Chemicals: Risk Factors and Characterizations. **Public workshop sponsored by U.S. Environmental Protection Agency**. Cincinnati, Ohio. February 11, 1993.

“Introduction to Risk Assessment”

In: Tutorial Session on Environmental and Occupational Risk Assessment and Risk Communication. 11th International System Safety Conference. **Ohio Chapter of the System Safety Society**. Cincinnati, Ohio. July 29, 1993.

“The U.S. EPA's Use of Uncertainty Factors”

In: Workshop on Safety Assessment for Non-Cancer Endpoints: The Benchmark Dose and Other Possible Approaches. **California EPA, U.S. EPA and U.S. Agency for Toxic Substances and Disease Registry**, Tiburon, California, May 12, 1992.

“Risk Assessment: Who needs it?”

All-Ohio Safety and Health Congress and Exhibit. Cincinnati, Ohio. April 1, 1992.

“Bridging the Chasm: Breakthroughs Needed in Noncancer Risk Assessment”

In: Kettering Seminar Series. **University of Cincinnati, College of Medicine**. Cincinnati, Ohio. January 22, 1992.

“Role of Risk Analysis and Risk Management in the U.S”

In: 3rd U.S.-Japan Governmental Conference on Drinking Water Quality Management. **Governments of the United States and of Japan**, Cincinnati, Ohio. September 22, 1992.

“The Reference Dose”

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

In: Conference on Trace Elements in Health and Disease. **International Society for Trace Element Research in Humans and Nordic Trace Element Society**, Stockholm, Sweden. May 27, 1992.

“Novel Approaches to the Estimation of Noncancer Health Risk”
International Programme on Chemical Safety, World Health Organization, Geneva, Switzerland. January 16, 1992.

“The Reference Doses for Chromium”
In: Workshop on Risk Assessment of Essential Elements. Public workshop sponsored by **U.S. Environmental Protection Agency, Agency for Toxic Substances and Disease Registry, and International Life Sciences Institute**, Herdon, Virginia. March 12, 1992.

“The Reference Dose”
In: Workshop on Risk Assessment of Essential Elements. Public workshop sponsored by **U.S. Environmental Protection Agency, Agency for Toxic Substances and Disease Registry, and International Life Sciences Institute**. Herdon, Virginia. March 10, 1992.

“Novel Approaches to the Estimation of Noncancer Health Risk: Probabilistic RfDs, Benchmark Dose, and Severity Modeling”
In: Workshop on Risk Assessment for Noncarcinogens. **Health and Welfare Canada**, Tunney's Pasture, Ottawa. April 29, 1991.

“Novel Approaches to Noncancer Health Risk Assessment”
In: EPA Regional Risk Assessors' Meeting. **U.S. Environmental Protection Agency**, Denver, Colorado. June 25, 1991.

“Risk Communication-A Challenge for the 1990's and Beyond”
System Safety Society. Cincinnati, Ohio. August 5, 1991.

“Quantitative Risk Assessment: The Reference Dose (RfD) and Research to Improve this Model Including the Use of Average Uncertainty Factors”
In: Symposium on Neurotoxicity Risk Assessment: State of the Art. **Society of Toxicology**. Dallas, Texas. March 1, 1991.

“Novel Approaches for Quantitative Assessment of Risks for Noncancer Effects”
Boston Risk Assessment Group and New England Chapter of the Society for Risk Analysis. Boston, Massachusetts. February 12, 1991.

“Impact of Risk Related Concerns on the EPA Programs”
In: Advanced Research Workshop on Nitrate Contamination: Exposure, Consequences and Control. **North Atlantic Treaty Organization (NATO)**, Lincoln, Nebraska. September 14, 1990.

“How Are Environmental Criteria Developed?”
In: A course entitled "Environmental and Occupational Health Risk Assessment and Risk Management." Developed for **City of Cincinnati Council** and other local decision-makers. Cincinnati, Ohio. May 3, 1990.

“Non-carcinogenic Risk Assessment”
In: Risk Assessment Workshop. **Federal-State Toxicology and Regulatory Alliance Committee**. Washington D.C. April 19, 1990.

“Risk above the RfD and Benchmark Dose Procedures”

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

In: Workshop to Discuss Noncancer Risk Assessment Methods/Data Needs to Support the New Clean Air Act Amendments. **U.S. Environmental Protection Agency**, Research Triangle Park, North Carolina. July 23, 1990.

“Reference Dose (RfD)”

In: Workshop to Discuss Noncancer Risk Assessment Methods/Data Needs to Support the New Clean Air Act Amendments. **U.S. Environmental Protection Agency**, Research Triangle Park, North Carolina. July 23, 1990.

“Guidelines Used to Assess Toxicological Hazards: Quantification Issues”

In: Symposium on Access and Use of Information Resources in Assessing Health Risks from Chemical Exposure. **Oak Ridge National Lab** and **U.S. Environmental Protection Agency**, Knoxville, Tennessee. June 28, 1990.

“How Statutes and Executive Orders Affect the Use of Scientific Information”

In: Regulation Development in EPA Course. **U.S. Environmental Protection Agency**, Washington, D.C. June 20, 1990.

“Risk Assessment and Its Uses: Directions of New Research”

National Institute of Occupational Safety and Health (NIOSH), Cincinnati, Ohio. June 20, 1989.

“Health Risk Assessment: Chronic Reference Dose”

In: Washington Conference on Risk Assessment. **Center for Energy and Environmental Management**. Washington, D.C. September 26, 1989.

“EPA's Approach to Developing Acceptable Air Quality Criteria”

In: 4th Annual Conference. **HAZTECH International**. Cincinnati, Ohio. September 13, 1989.

“The Underlying Basis of Risk Management Decisions”

In: 4th Annual Conference. **HAZTECH International**. Cincinnati, Ohio. September 12, 1989.

“Derivation of Risk Values by EPA”

Hazardous Materials Management Conference and Exhibition/Central. Rosemont, Illinois. March 15, 1989.

“The Reference Dose”

American Industrial Hygiene Association, Annual Toxicology Symposium. Williamsburg, Virginia. August 16, 1988.

“Reference Dose: Description and Use in Health Risk Assessments”

In: 54th Annual Meeting. **American Mosquito Control Association**. Denver, Colorado. February 2, 1988.

“Use of Uncertainty Factors for Reference Dose”

In: Workshop on the Use of the EPA Tools in State Risk Assessment. **National Governors' Association**. Copper Mountain, Colorado. May 4-6, 1988.

“Development of Oral Reference Doses”

In: Workshop on EPA's Integrated Risk Information System: Access, Use, and Interpretation. **U.S. Environmental Protection Agency**, Lexington, Massachusetts. July 22, 1987.

“The Systemic Toxicity of Air Pollutants: New Directions in Health Risk Assessment”

In: Session 100: Balanced Approach to Risk Assessment. Annual Meeting. **Air Pollution Control Association**. New York, New York. June 22, 1987.

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

“Safety Factors in Non-Carcinogenic Risk”

In: Workshop on Reducing Uncertainty in Risk Assessment. **Michigan State University**. East Lansing, Michigan. May 18, 1987.

“New Development in the Derivation and Application of Acceptable Daily Intake Values”

In: Workshop on Approaches to Ecological and Human Health Risk Analysis for Disposal of Contaminated Sediments and Human Consumption of Contaminated Seafood. **U.S. Environmental Protection Agency** and **U.S. Department of the Army**, Seattle, Washington, December 16, 1985.

“Human Health Assessment”

In: Workshop of Water Quality-Based Toxics Control. **U.S. Environmental Protection Agency**, Philadelphia, Pennsylvania. November 14, 1985.

“Systemic Health Hazard Assessment”

In: Workshop on Human Health Criteria. **U.S. Environmental Protection Agency**, Philadelphia, Pennsylvania. October 3, 1985.

“Novel Methods for the Estimation of Acceptable Daily Intake”

In: Course entitled “Risk Assessment 101.” **U.S. Environmental Protection Agency**, Washington, D.C. February 19, 1985.

“Use of Risk Assessment to Set Safe Levels”

In: Conference on Emerging Issues in Environmental Analysis and Planning: Implication for Professional Education. **University of Cincinnati**, **U.S. Army Corps of Engineers** and the **U.S. Environmental Protection Agency**. Cincinnati, Ohio. April 12, 1985.

“Environmental Risk Assessment”

In: Course on Applied Toxicology. **University of Cincinnati**, **College of Medicine**. Cincinnati, Ohio. April 6, 1984.

“Toxicity Risk Assessment”

U.S. Environmental Protection Agency, Atlanta, Georgia. July 7, 1984.

“The Regulatory History and Experimental Support of Uncertainty (Safety) Factors”

In: Workshop on Toxic Air Pollution: A Regulatory Challenge. **State and Territorial Air Pollution Control Officials**. Washington, D.C. October 10-12, 1984.

“Traditional Means of Assessing the Safety of Non-carcinogens”

In: Symposium on Federal Regulation of Carcinogens. **American Chemical Society**. Washington, D.C. August 30, 1983.

“The U.S. Environmental Protection Agency Perspective of Qualitative Risk Assessment”

In: Course on Applied Toxicology. **University of Cincinnati**, **College of Medicine**. Cincinnati, Ohio. March 30, 1983.

“EPA Criteria Documents”

In: Fifth Annual Course in the Principles and Practices of Genetic Toxicology. Division of Environmental Toxicology. **University of Texas Medical Branch**. Galveston, Texas. 1980.

“Quantitative Considerations in Urethane Induced Neoplasia”

In: Toxicology Division Seminars Series. **University of Cincinnati**, **College of Medicine**. Cincinnati, Ohio. October 25, 1979.

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

“Some Quantitative Aspects of Chemical Carcinogenesis II”
In: Toxicology Division Seminar Series. **University of Cincinnati, College of Medicine.**
Cincinnati, Ohio. February 2, 1979.

“Some Quantitative Aspects of Chemical Carcinogenesis I”
In: Toxicology Division Seminar Series. **University of Cincinnati, College of Medicine.**
Cincinnati, Ohio. March 7, 1978.

“Computer Simulation Studies on Kehoe’s Lead Data”
In: Toxicology Division Seminar Series. **University of Cincinnati, College of Medicine.**
Cincinnati, Ohio. May 14, 1977.

“A New Approach to Minimum Toxic Dose”
In: Toxicology Division Seminar Series. **University of Cincinnati, College of Medicine.**
Cincinnati, Ohio. February 25, 1976.

I also have given over 50 formal, but uninvited, presentations (e.g., abstracts at the scientific annual meetings).

RESEARCH: RISK ASSESSMENT PUBLICATIONS (Selected)

Richard A. Becker, Vicki Dellarco, Jennifer Seed, Joel M. Kronenberg, Bette Meek, Jennifer Foreman, Christine Palermo, Chris Kirman, Igor Linkov, Rita Schoeny, *Michael Dourson*, Lynn H. Pottenger, and Mary K. Manibusan. 2017. Quantitative weight of evidence to assess confidence in potential modes of action. *Regulatory Toxicology and Pharmacology*, 86:205–220.

Michael Dourson and Raymond G York. 2016. Advances in Assessing Ingredient Safety. *Regulatory Toxicology and Pharmacology*. 79:S112-S118.

Michael Dourson, Bernard Gadagbui, Rod Thompson, Edward Pfau, and John Lowe. 2016. Managing Risks of Noncancer Health Effects at Hazardous Waste Sites: A Case Study Using the Reference Concentration (RfC) of Trichloroethylene (TCE). *Regulatory Toxicology and Pharmacology* 80:125-133.

Ted W. Simon, Yiliang Zhu, *Michael L. Dourson*, Nancy B. Beck. 2016. Bayesian methods for uncertainty factor application for derivation of reference values. *Regulatory Toxicology and Pharmacology* 80:9-24.

Dourson, Michael, Chinkin, Lyle, MacIntosh, D.L., Finn, Jennifer, Brown, Kathleen, Reid, Stephen, Martinez, Jeanelle. 2016. A Case Study of Potential Human Health Impacts from Petroleum Coke Transfer Facilities. *Journal of the Air & Waste Management Association* May. DOI: 10.1080/10962247.2016.1180328.

Nancy B. Beck, Richard A. Becker, Neeraja Erraguntla, William H. Farland, Roberta L. Grant, George Gray, Christopher Kirman, Judy S. LaKind, R. Jeffrey Lewis, Patricia Nance, Lynn H. Pottenger, Susan L. Santos, Stephanie Shirley, Ted Simon, *Michael L. Dourson*. 2016. Approaches for describing and communicating overall uncertainty in toxicity characterizations:

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

U.S. Environmental Protection Agency's Integrated Risk Information System (IRIS) as a case study. *Environment International* 89–90 (2016) 110–128. **(regulatory and safety evaluation paper of the year, Society of Toxicology, Regulatory and Safety Evaluation Specialty Section)**

Greenberg M, Goldstein BD, Anderson E, *Dourson M*, Landis W, North DW. 2015. Whither Risk Assessment: New Challenges and Opportunities a Third of a Century After the Red Book. *Risk Analysis*, 35(11): 1959-1968.

Nance, P., O. Kroner, L. Haber and *M. Dourson*. 2015. Assessing Risks to Human Health. In Reference Module in Biomedical Sciences (Online). In-Press.

Dankovic DA, Naumann BD, Maier A, *Dourson ML*, Levy LS. 2015. The Scientific Basis of Uncertainty Factors Used in Setting Occupational Exposure Limits. *J Occup Environ Hyg*. 2015 Nov 25;12 Suppl 1:55-68

Cope, Rhian B., Sam Kacew, *Michael Dourson*. 2015. A reproductive, developmental and neurobehavioral study following oral exposure of tetrabromobisphenol A on Sprague-Dawley rats. *Toxicology* 329 (2015) 49–59.

Dourson, M., Reichard, J., Nance, P., Burleigh-Flayer, H., Parker, A., Vincent, M., McConnell, E.E. 2014. Mode of action analysis for liver tumors from oral 1,4-dioxane exposures and evidence-based dose response assessment. *Regul. Toxicol. Pharm.* 68(3): 387-401.

Cope, R., Nance, P., *Dourson, ML*. 2014. “Chapter 4. Human Health Risk Assessment of Inhaled Materials.” IN: Salem, H., Katz, S., eds. *Inhalation Toxicology*, 3rd Edition, CRC Press.

Juberg, D.R., Borghoff, S.J., Becker, R.A., Casey, W., Hartung, T., Holsapple, M.P., Marty, S.M., Mihaich, E.M., Van Der Kraak, G., Wade, M.G., Willett, C.E., Anderson, M.E., Borgert, C.J., Cody, K.K., *Dourson, M.L.*, Fowle, J.R., Gray, L.E. Lamb, J.C., Ortego, L.S., Schug, T.T., Toole, C.M., Zorrilla, L.M., Kroner, O.L., Patterson, J., Rinckel, L.A., Jones, B.R. 2014. Workshop Report, Lessons Learned, Challenges, and Opportunities: The US. Endocrine Disruptor Screening Program. ALTEX, ALTES. *ALTES*, 31:63-78, January. Workshop Report is now available via open access publication in ALTEX.

Rosen, JS; Whelton, AJ; McGuire, MJ; Clancy, JL; Bartrand, T; Eaton, A; Patterson, J; *Dourson, M*, Nance, P; Adams, C. 2014. The crude MCHM chemical spill in Charleston, W.Va. *Journal AWWA*. Vol. 106:65-74.

Patterson J., Maier A, Kohrman-Vincent M, and *ML Dourson*. 2013. Peer consultation on relationship between PAC profile and toxicity of petroleum substances. *Reg. Tox and Pharm*, Volume 67: S86–S93.

Dourson, M, Becker, R.A., Haber, L.T., Pottenter, L.H., Bredfeldt, T., Fenner-Crisp, P. 2013. Advancing Human Health Risk Assessment: Integrating Recent Advisory Committee Recommendations. *Crit. Rev. Toxicol.* 43(6): 467-92 (doi: 10.3109/10408444.2013.807223).

Dourson, M., Gadagbui, B., Griffin, S., Garabrant, D.H., Haws, L.C., Kirman, C. and Tohyama, C. 2013. The importance of problem formulations in risk assessment: A case study involving dioxin-contaminated soil. *Reg. Toxicol. Pharmacol.* 66(2): 208-216.

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

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I have also co-authored well over 100 documents for the EPA, TERA and others that address either risk assessments for specific chemicals, or risk assessment methods, and have additional published manuscripts that are not listed here. I have also written three stories on integrating science and Biblical text: *Messiah's Star*, *The Beginning*, and *The Linen Cloths*.

RESEARCH: COMMENTARIES (Selected)

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SERVICE: SCIENTIFIC SESSIONS CHAIRED OR PLANNED (Selected)

Chair: Well Over 100 Risk Assessment Peer Review Meetings

Since 1986, and to the present, I have chaired well over 100 scientific peer review meetings for risk assessment documents. Documents have covered a number of topics including risk assessment methods and assessments including cancer and non-cancer toxicity. These meetings have been sponsored by a number of organizations through either Toxicology Excellence for Risk Assessment's (*TERA*) program of the International Toxicity Estimates for Risk (*ITER*) database (for examples, please see www.tera.org/peer), by EPA through its IRIS database (see www.epa.gov/iris), or by groups such as Versar. These reviews have discussed well over 400 chemicals or risk issues.

Chair: Tox21: Current Progress, Next Steps and Exploring the Concept of a New Center of Excellence

Society of Toxicology. Baltimore, Maryland. March 12, 2017.

Co-chair: Low-Dose Non-Monotonic Responses

Society of Toxicology. Baltimore, Maryland. March 14, 2017.

Chair: Endocrine Disruption: Research, Analysis, Regulation, & Communication

Society of Toxicology. New Orleans, Louisiana, March 14, 2016.

Chair: Derived No-Effect Levels+ Big Data Toxicology Meeting

Society of Toxicology. New Orleans, Louisiana. March 13, 2016.

Moderator: Can/Should peer-reviewed publications be used to formulate regulatory policy?

Society of Toxicology. San Diego, California. March 23, 2015.

Chair: Beyond Science and Decisions: From Problem Formulation to Dose Response

Alliance for Risk Assessment. Cincinnati, Ohio. May 9-11, 2015.

Facilitator: Integration of Scientific Evidence to Inform Ozone Effects on Human Health

Texas Commission on Environmental Quality. Austin. Texas. April 8, 2015.

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

Chair: TTC Threshold Levels & TTC Decision Tree

EFSA/WHO workshop on Threshold of Toxicological Concern (TTC). Brussels, Belgium. December 3-5, 2014.

Chair: Chemical Assessment Advisory Committee for Ammonia

U.S. Environmental Protection Agency (EPA). Washington, D.C. July 14-16, 2014.

Chair: Beyond Science and Decisions: From Problem Formulation to Dose Response

Alliance for Risk Assessment. Austin, Texas. May 20-22, 2014.

Chair: Expert Panel Review of Screening Levels for Exposure to Chemicals From the January 2014 Elk River Spill

West Virginia Testing Assessment Project. Charleston, West Virginia. March 31, 2014.

Chair: Workshop to Assess the Modes of Action of Lung Tumors in Mice From Exposures to Styrene Ethylbenzene, and Naphthalene

Styrene Information & Research Center. Cincinnati, Ohio. September 17, 2013.

Chair: Melding Exposure and Toxicology Science I the 21st Century: Moving from Hazard to a Risk Based Paradigm

The Toxicology Forum. Aspen, Colorado. July 7-11, 2013.

Co-chair: Advancing Risk Assessment Approaches...in the 21st Century

The Toxicology Forum. Washington, DC. January 30-Feb. 2, 2012.

Rapporteur: Weight of Evidence Workshop, Session #1: From Review to Inference

Center for Advancing Risk Assessment Science and Policy (ARASP). Washington, DC. December 4, 2012.

Chair: Soil Exposure: What Have We Learned and How Do We Improve Problem Formulations for Risk Assessment

The Toxicology Forum. Aspen, Colorado. July 10-14, 2011.

Co-Chair: Determination of the Contribution of Individual Stressors in Cumulative Risk Assessments

Society of Toxicology Annual Meeting. Salt Lake City, Utah. March 6-12, 2010.

Chair: Fetal and Early-Life Perchlorate Exposures and Outcomes

Symposium. Perchlorate Exposures, Iodine Modulation of Effect, and Epidemiologic Associations: Implications for Risk Assessment. An Ancillary Program of the Annual Meeting of the Society of Toxicology. Seattle, Washington. March 2008.

Chair: Perchloroethylene (PERC): Approaches To Evaluating Uncertainty In Health Risk Assessment

Toxicology Forum. Washington D.C. January 30-February 1, 2007.

Chair: Mechanism/Mode Of Action Analyses

Risk Assessment Methodology Technical Committee, Weight of Evidence Workshop. Health and Environmental Sciences Institute. Baltimore, Maryland. December 7-8, 2006.

Session Planner and Chair: Issues In Trichloroethylene Risk Assessment

Midwest States Risk Assessment Symposium. Indianapolis, Indiana. August 23, 2006.

Session Planner and Chair: Panel Discussion On Trichloroethylene Toxicity

Midwest States Risk Assessment Symposium. Indianapolis, Indiana. August 25, 2004.

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

Chair: Screening Level Assessment Of Exposure And Characterization Of Risk For Humans

Risk Methodologies External Peer Review Panel Meeting, The Soap and Detergent Association. Washington, D.C., January 14, 2004.

Chair: A Review of the Reference Dose (RfD) and Reference Concentration (RfC) Processes

External Peer Review for U.S. EPA via Versar. Washington, D.C., June 19, 2002.

Session Planner and Co-Chair: Modeling of Population Variability

Society of Toxicology. Nashville, TN., Tuesday, March 19, 2002.

Co-Chaired Methyl Mercury: Risk Assessment, Policy and Research Needs

Children's Health and the Environment 2000. 19th International Neurotoxicology Conference. Colorado Springs, Colorado, September 26, 2000.

Session Planner and Co-Chair: Effective Risk Communication: Avoiding the Pitfalls

Continuing Education Course at the Society of Toxicology Annual Meeting, Seattle, Washington, March 1, 1998.

Lead: Panel Discussion on Information Resources for Toxicology and Environmental Health

Society of Toxicology, NCAC. George Washington University. Washington, DC, June 18, 1996.

Moderator: Workshop on Toxicity Assessment

At Harmonization of State/Federal Approaches at the Environmental Risk Symposium. Michigan State University. May 20-21, 1996.

Chair: Session on Risk Assessment

Chromium Symposium. Multiple Sponsors. Arlington, Virginia, April 23-24, 1996.

Session Planner and Co-Chair: Risk Assessment of Essential Trace Elements (ETES)

Society of Toxicology Annual Meeting. Anaheim, California, March 13, 1996.

Session Planner and Chair: Risk Characterization

In: New Techniques in Risk Assessment. International Business Communication. Orlando, Florida, February 16, 1996.

Session Planner and Chair: EPA's Integrated Risk Information System: Future Directions

In: New Techniques in Risk Assessment. International Business Communication. Orlando, Florida, February 14, 1996.

Session Planner and Co-Chair: Role of Toxicology in Tomorrow's Risk Assessment Practices

Sponsored by the Society for Risk Analysis and the International Congress of Toxicology. Seattle, July 2-6, 1995.

Session Planner and Chair: Techniques for Quantifying Uncertainty in Risk Assessment

Society of Toxicology Annual Meeting, March 19, 1995.

Session Planner and Co-Chair: Statistical and Dose Response Models in Risk Assessment

Society of Toxicology Annual Meeting, March 18, 1995.

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

Member of the Planning Committee: Workshop on Benchmark Dose Methodology
Sponsored by the EPA, the American Industrial Health Council and the International Life Sciences Institute, Fairfax, Virginia, September 28-30, 1993.

Session Planner and Co-Chair: Basics of Risk Assessment

In: Conference on the Risk Assessment Paradigm after Ten Years: Policy and Practice Then, Now, and in the Future. Sponsored by the U.S. Army, Air Force, Navy and EPA, Dayton, Ohio, April 5, 1993.

Session Planner and Co-Chair: Basic Risk Assessment: Current Developments

Continuing Education Course at the Society of Toxicology Annual Meeting. New Orleans, Louisiana, March 14, 1993.

Member of the Planning Committee: Risk Assessment of Essential Elements

Sponsored by U.S. ATSDR, EPA and the International Life Sciences Institute. Herndon, Virginia, March 10-12, 1992.

Session Planner and Co-Chair: Improvements in Quantitative Noncancer Risk Assessment

Society of Toxicology. Seattle, Washington. February 27, 1992.

Session Planner and Co-Chair: Neurotoxicity Risk Assessment: State of the Art

Society of Toxicology. Dallas, Texas. March 1, 1991.

Session Planner and Co-Chair: Improvements in Quantitative Noncancer Risk Assessment

Society of Toxicology. San Francisco, California. February 27, 1985.

SERVICE: APPOINTMENTS OR ELECTIONS (Selected)

2017 to...	Associate Editor Toxicological Sciences
2016 to...	Secretary Board of Directors, Toxicology Forum
2014 to...	Vice President Elect, Vice President, President Society of Toxicology's Specialty Section for Regulatory and Safety Evaluation
2012 to...	President and Member Board of Directors, Toxicology Education Foundation
2012 to...	Member Science Advisory Council. North American Flame Retardant Association
2011 to...	Member Science Advisory Board of the U.S. Environmental Protection Agency (EPA)
2009 to...	Fellow Society for Risk Analysis
2007 to...	Advisor African Society of Toxicological Sciences
2007 to...	Fellow Michael L. Dourson, Ph.D., DABT, FATS, FSRA

Academy of Toxicological Sciences

- 1999 to... **Member and Vice Chair (2003)**
Health Advisory Board. NSF International
- 1995 to... **Member**
Editorial Board of the Journal "Regulatory Toxicology and Pharmacology"
- 1994 to... **Member**
Editorial Board of the Journal "Human and Experimental Toxicology"
- 2016 **Member**
Joint Meeting of the Food and Agriculture Organization of the United Nations (FAO) Panel of Experts on Pesticide Residues in Food and the Environment and the World Health Organization (WHO) Core Assessment Group on Pesticide Residues (JMPR)
- 2015 **Discussant**
Increasing the manganese reference value despite the growing environmental and health concerns, International Manganese Institute, University of Ottawa, October 14, 2015
- 2015 **Member**
Joint Meeting of the Food and Agriculture Organization of the United Nations (FAO) Panel of Experts on Pesticide Residues in Food and the Environment and the World Health Organization (WHO) Core Assessment Group on Pesticide Residues (JMPR)
- 2014 **Member**
World Health Organization & European Food Safety Commission Expert Panel. Workshop on Review of the Threshold of Toxicological Concern (TTC) Approach. Brussels, Belgium. December 2-4, 2014.
- 2011-2014 **Member, Co-Chair, Chair**
Membership Committee of the Society of Toxicology
- 2010-2015 **Chair**
Audit Committee of the Society for Risk Analysis
- 2010 **Faculty**
Resource person to the Risk Assessment Summer School (RASS) in Calabar, Nigeria, sponsored by the International Union of Toxicology, May 26 to 30
- 2009-2011 **Vice President Elect, Vice President, President**
Society of Toxicology's Specialty Section on Mixtures
- 2008-2014 **Member and President**
Council of Mt. Zion Lutheran Church
- 2008 **Participant, Essential Metals Workshop**
Institute of Population Health, University of Ottawa
- 2008 **Member**

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

Green Chemistry Initiative Science Advisory Panel, California Environmental Protection Agency, Department of Toxic Substances Control. San Francisco, CA

- 2007 **Lecturer**
Shanghai Municipal Center for Disease Control and Prevention (Shanghai CDC), National Continuing Education Training Workshop on Chemical Risk Assessment and Its Development. Shanghai, P.R. China
- 2006 to 2007 **Member**
The ECOS and DoD Sustainability Workgroup. Department of Defense, Washington, D.C.
- 2006 **Panelist**
Joint meeting of the dental products panel of the medical devices advisory committee of the CDRH and the peripheral and central nervous system drugs advisory committee of the CDER, Food and Drug Administration, September 6-7
- 2005 **Rapporteur**
Workshop on Poisons Centres and the Use of Human Data in Consumer Product Risk Assessment, World Health Organization (WHO). Berlin, Germany. May 9-10, 2005
- 2004 **Panelist**
Technical workshop on human milk surveillance and biomonitoring for environmental chemicals in the United States. Milton Hershey Medical Center, Penn State, Pennsylvania, September 24 to 26
- 2003 to 2006 **Member and Chair**
World Wide Web Advisory Committee. Society of Toxicology
- 2003 **Panel Member**
Mid-Cycle Peer Review for NHEERL's Neurotoxicology Division, U.S. EPA, RTP, NC
- 2001 to 2005 **Secretary**
Society for Risk Analysis.
- 2001 **Panel Member**
Peer Review for NHEERL's Neurotoxicology Division, U.S. EPA, RTP, NC
- 2000 to 2001 **Temporary Advisor**
World Health Organization for Consultation on Uncertainty and Variability: BGVV, Berlin Germany. 9-11 May
- 2000 to 2001 **Advisor and Rapporteur**
Food Safety in Europe: Risk assessment of chemicals in food and diet. ILSI: Barcelona, Spain
- 1999 **Member**
Panel for the harmonization of cancer and non-cancer risk assessment. Society of Toxicology. November 1-3
- 1999 to 2002 **Member**
Oversight Group for the EPA Cooperative Agreement. George Washington University

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

1999 to 2002 **Vice President Elect, Vice President, President and Councilor**
Society of Toxicology's Specialty Section on Risk Assessment

1998 to 2004 **Executive Director and Treasurer**
Concordia Lutheran Church, Cincinnati, Ohio

1996 to 1998 **Member**
FDA Science Board Subcommittee on Toxicology

1995 **Co-Guest Editor**
EPA Uncertainty Factor Workshop. Human and Ecological Risk Assessment, 1(5):512-662

1995 to 1999 **Member, Treasurer, Vice President, and President (1998)**
Board of Directors of the American Board of Toxicology

1995 to 1996 **President (first elected)**
Dose-Response Specialty Group, Society for Risk Analysis

1995 to 2006 **Scoutmaster, Assistant Scoutmaster**
Troop 133 of Concordia Lutheran Church, Cincinnati, Ohio

1994 to 2007 **Member**
Editorial Board of the Journal Human and Ecological Risk Assessment

1994 to 1995 **Director, Property Board**
Concordia Lutheran Church, Cincinnati, Ohio

1994 to 1995 **Cubmaster**
Pack 133 of Concordia Lutheran Church, Cincinnati, Ohio

1991 to 1994 **President-Elect, President and Councilor**
The Ohio Valley Chapter of the Society of Risk Analysis

1993 **Member**
Committee on Lutheran Mission Ministry Strategy for Greater Cincinnati

1993 **Expert Witness**
OSHA for Informal Public Hearing on the Proposed Rule on Occupational Exposure to Glycol Ethers, Washington, D.C., July 21

1993 **Temporary Advisor and Joint Rapporteur**
World Health Organization for Consultation on Guiding Principles and Methodology for Quantitative Risk Assessment in Setting Exposures Limits: III, Geneva, Switzerland, June 14-18

1993 **Faculty**
As part of an EPA-sponsored delegation to teach a course on Environmental Management-Risk Assessment Training, Lodz, Poland, March 29-April 2

1993 **Temporary Advisor**
World Health Organization for Consultation on Guiding Principles and Methodology for Quantitative Risk Assessment in Setting Exposures Limits: II, Langen, Germany, January 19-22

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

- 1992 **Temporary Advisor and Co-Vice Chair**
World Health Organization for Consultation on Guiding Principles and Methodology for Quantitative Risk Assessment in Setting Exposures Limits: I, Geneva, Switzerland, January 14-17
- 1990 to 1993 **Vice President and President**
Academy of Kettering Fellows. University of Cincinnati, College of Medicine
- 1988 to 1992 **Councilor**
The Ohio Valley Chapter of the Society of Toxicology
- 1988 to 1990 **Vice President (interim), President (first elected) and Councilor**
Society of Toxicology's Specialty Section on Risk Assessment
- 1987 to 1992 **Chair**
EPA Risk Assessment Forum's technical panel to develop Risk Assessment Guidelines for Non-Cancer Health Effects
- 1986 to 1993 **Treasurer, Vice President and President**
Lutheran Church of the Cross, Cincinnati, Ohio
- 1986 to 1994 **Chair and Co-Chair**
Reference Dose (RfD) Work Group of the EPA (with a 1 year break in service)
- 1986 to 1995 **Charter Member**
Risk Assessment Forum of the EPA

AWARDS (Selected)

- 2017 **Outstanding Regulatory and Safety Evaluation Paper.** Given for the outstanding published paper in regulatory and safety evaluation during 2016. Regulatory and Safety Evaluation Specialty Section (RSESS). Society of Toxicology. Award was based on a group effort.
- 2013 **Risk Communication Award.** KidsChemicalSafety.org was honored with the Alliance for Chemical Safety. The risk communication award recognizes a company, organization or individual who has shown outstanding leadership in communicating about chemical risks. Award was based on a group effort.
- 2013 **Best Charity Award.** Toxic Chemical Safety awarded for recognition as one of the 'BEST' charities in America. Presented upon rigorous independent review for being able to certify, document and demonstrate on an annual basis that met the highest standards of public accountability, program effectiveness, and cost effectiveness.
- 2009 **International Achievement Award.** In recognition of his outstanding contributions nationally and internationally to the advancement of regulatory science, policy, and methodologies in risk assessment and risk management and for his distinguished and creative participation in regulatory organizations and in

decisions of ultimate public health significance worldwide. International Society of Regulatory Toxicology and Pharmacology.

- 2008 **Outstanding Risk Assessment Paper.** Given for the outstanding published paper in 2007 demonstrating an application of risk assessment. Risk Assessment Specialty Section, Society of Toxicology. Award was based on a group effort.
- 2008 of **The Independent Charities Seal of Excellence.** Given to the members Independent Charities of America and Local Independent Charities of America that have, upon rigorous independent review, been able to certify, document, and demonstrate on an annual basis that they meet the highest standards of public accountability, program effectiveness, and cost effectiveness. These standards include those required by the US Government for inclusion in the Combined Federal Campaign, probably the most exclusive fund drive in the world. Of the 1,000,000 charities operating in the United States today, it is estimated that fewer than 50,000, or 5 percent, meet or exceed these standards, and, of those, fewer than 2,000 have been awarded this Seal. Award was based on a group effort.
- 2007 **Service to the Voluntary Children's Chemical Evaluation Program (VCCEP).** Given for service as chair and participant on external review panels. Toxicology Excellence for Risk Assessment, Cincinnati, Ohio.
- 2003 **Arnold J. Lehman Award.** An award in recognition of major contributions to risk assessment and the regulation of chemical agents, including pharmaceuticals. Society of Toxicology.
- 2002 **Environmental Stewardship Award.** An award issued in gratitude for serving on the C8 Assessment of Toxicity Team as a toxicologist in the development of toxicity factors and screening levels. West Virginia, Department of Environmental Protection. Award was based on a group effort.
- 2000 **Key Risk Award.** Environmental Studies Topic. Links2Go. *TERA's* International Toxicity Estimates for Risk (*ITER*) database won this award by being 7th most accessed environmental web site in the world. Award was based on a group effort.
- 1998 **Outstanding Risk Assessment Paper.** Given for the outstanding published paper in risk assessment during 1997. Risk Assessment Specialty Section. Society of Toxicology. Award was based on a group effort.
- 1995 **In Appreciation.** An award for outstanding service and scientific contribution to the Environmental Protection Agency and to United States Government.
- 1994 **Special Achievement.** An award for noteworthy contribution as a member of the Risk Characterization Team towards an EPA-wide workshop on risk characterization.

Michael L. Dourson, Ph.D., DABT, FATS, FSRA

- 1992 **Bronze Medal.** An award for outstanding service in the review of EPA's 503 Sludge Regulations. Award was based on a group effort.
- 1992 **OHEA Peer Award for Scientific Achievement.** An annual peer award for scientific achievement in EPA's Office of Health and Environmental Assessment
- 1992 **RfD/RfC Work Group Appreciation Award.** For sustained superior leadership of and scientific contributions to EPA's Reference Dose/Reference Concentration Work Group.
- 1991 **Bronze Medal.** An award for outstanding service in the development of EPA's Integrated Risk Information System (IRIS). Award was based on a group effort.
- 1990 **Special Achievement.** An EPA award for ensuring ORD's successful involvement in regulatory support issues with EPA's Office of Pesticides and Toxic Substances.
- 1988 **Special Achievement.** An EPA award for resolution of generic issues associated with the minimum data base needed to estimate Reference Doses (RfDs).
- 1987 **Special Achievement.** An award for further development of the EPA's -- Integrated Risk Information System (IRIS).
- 1986 **Bronze Medal.** An EPA award "for outstanding service in the organization and review of Risk Reference Doses (Acceptable Daily Intakes) and the science from which they are derived." Award was based on a group effort.
- 1984 **Tribute of Appreciation.** An EPA award for the "Development of Risk Assessment Guidelines."
- 1982 **Coach of the Year (soccer).** Greater Cincinnati League (Catholic Boys High School)
- 1980 **Bronze Medal.** An EPA award recognizing "Outstanding dedication, completion of tasks and contributions to environmental protection in the development of Water Quality Criteria." Award was based on a group effort.

AFFILIATIONS

I am a member of the American Association for the Advancement of Science (**AAAS**), the Society for Risk Analysis (**SRA**), and the Society of Toxicology (**SOT**). I am a Diplomate of the American Board of Toxicology (October 1985) and was recertified in 1990, 1995, 2000, 2005, 2010, and 2015. I am an elected Fellow of the Academy of Toxicological Sciences and the Society for Risk Analysis.

REFERENCES

References will be readily supplied upon request.

International Trips of Michael L. Dourson, Ph.D., DABT, FATS, FSRA

International Certificate Workshop entitled Environmental Health in the Philippines: Perspectives and Approaches. Ateneo Professional School. Makati City. June 1-2, 2017.

Annual Meeting of the Taiwan Chapter of the Society for Risk Analysis. Taichung City, Taiwan. May 25-26, 2017.

The Regional Training Program on Risk Assessment. Bibliotheca Alexandrina. Alexandria, Egypt. April 24-27, 2017.

American Chemistry Council: North American Flame Retardant Association. Science Advisory Council meeting in Jerusalem, Israel. November 15-17, 2016.

Joint Meeting of the Food and Agriculture Organization of the United Nations (FAO) Panel of Experts on Pesticide Residues in Food and the Environment and the World Health Organization (WHO) Core Assessment Group on Pesticide Residues (JMPR), Rome, Italy. September 13-22, 2016.

American Chemistry Council: North American Flame Retardant Association. Science Advisory Council meeting. Brussels, Belgium. November 3-5, 2015.

World Health Organization & European Food Safety Commission. Workshop on Review of the Threshold of Toxicological Concern (TTC) Approach. Brussels, Belgium. December 2-4, 2014.

Dose Response Assessment Boot Camp. Toxicology Excellence for Risk Assessment (TERA) at Gadjah Mada University. Yogyakarta, Indonesia. June 13-21, 2014.

Asian Pacific Economic Conference Workshop on Metals Risk Assessment. Cebu, Philippines. August 28-29, 2015.

International Workshop On Comprehensive Toxicology. Bengaluru, India. July 27-31, 2015.

British Toxicology Society Annual Congress. Birmingham, UK, April 20-21, 2015.

International Manganese Institute, University of Ottawa. Ottawa, Canada. October 14, 2015.

Joint Meeting of the Food and Agriculture Organization of the United Nations (FAO) Panel of Experts on Pesticide Residues in Food and the Environment and the World Health Organization (WHO) Core Assessment Group on Pesticide Residues (JMPR). Geneva, Switzerland. September 15-24, 2015.

American Chemistry Council: North American Flame Retardant Association. Science Advisory Council meeting. Frankfurt, Germany. May 7-9, 2013.

6/6/17

AMERICAN
OVERSIGHT

International Trips of Michael L. Dourson, Ph.D., DABT, FATS, FSRA

American Chemistry Council: North American Flame Retardant Association. Science Advisory Council meeting. Brussels, Belgium. May 7-9, 2012.

Risk Assessment Summer School (RASS) sponsored by the International Union of Toxicology. Calabar, Nigeria. May 26 to 30, 2010.

NATO Advanced Research Workshop: Integrating human effectiveness and risk characterization of non-lethal weapons into antiterrorism civil science programs. Prague, Czech Republic. October 18-23, 2004.

Science Symposium Update on Science Supporting the EU Voluntary Risk Assessment, International Copper Association. Rome, Italy. May 17, 2004.

ATSDR and RIVM Expert Panel Meeting on Chemical Risk Assessment and Children's Health. Brussels, Belgium. June 26, 2003.

From: Marathon Petroleum Corporation
Sent: Mon 6/12/2017 6:55:37 PM
Subject: Reminder-Retirement Reception for Patricia Richards
[Invitation.pdf](#)

Greetings!

You are cordially invited to join our Chairman, President and Chief Executive Officer Gary Heminger for a Retirement Celebration Reception honoring Patricia Richards on Wednesday June 21st from 5:30 p.m. – 7:30 p.m. in the Mansfield Room (S-207) of the U.S. Capitol.

The invitation is below and attached.

Please RSVP by this Friday, June 16th by replying to this e-mail or [clicking here](#).

We appreciate your consideration.

Best Regards,

Marathon Petroleum Federal Government Affairs Team

Jake Menefee, Mike Birsic, Guy Beeman & Steve Higley



Gary R. Heminger
Chairman, President and Chief Executive Officer
Marathon Petroleum Corporation

Invites You

To a
Retirement Celebration

Honoring
Patricia Richards
Vice President Federal Government Affairs

Welcoming
Jake Menefee
Vice President Federal Government Affairs

Wednesday, June 21, 2017
5:30 p.m. – 7:30 p.m.
United States Capitol
The Mike Mansfield Room (S-207)

The House and Senate Ethics Committees were consulted in the planning
of this event to ensure compliance with all applicable rules



Gary R. Heminger

Chairman, President and Chief Executive Officer
Marathon Petroleum Corporation

Invites You

To a
Retirement Celebration

Honoring

Patricia Richards

Vice President Federal Government Affairs

Welcoming

Jake Menefee

Vice President Federal Government Affairs

Wednesday, June 21, 2017

5:30 p.m. – 7:30 p.m.

United States Capitol

The Mike Mansfield Room (S-207)

Please click [HERE](#) or reply to this e-mail to RSVP

The House and Senate Ethics Committees were consulted in the planning of this event to ensure compliance with all applicable rules

EPA-17-0193 and EPA-17-0194-A-000717

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: CyberSecurity Executive Order Workshop
Sent: Wed 6/7/2017 12:33:22 PM
Subject: [SPAM] Register: Implementing the President's Cybersecurity Exec Order (EO) Workshop

**Please Review and Forward to
Your Government Executives, Managers and Staff
Who Play a Part in Agency Cyber Security Management or Implementation**

Potomac Forum Training Workshop
**Implementing the President's
Cybersecurity Executive Order (EO)
Training Workshop**

*A "How To" Workshop to Implement the
Requirements of the EO and its Reporting Requirements*

Date: Wednesday, July 12, 2017

Early Bird Reduced Registration Fee Until June 17th

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info@PotomacForum.org

**Location of Workshop:
Willard InterContinental Hotel
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**Workshop for Government & Industry Partners
Press is Not Permitted to Encourage
Candid Discussion in our Learning Environment**

**Keynote:
Dr. Ron Ross
NIST Fellow
Author of the NIST Risk Management Framework (RMF) and
Numerous NIST Cyber Security Publications**

Government Speakers are being approved for participation by their Agencies.

Potomac Forum Workshops are 100% educational programs and not sales or marketing events!

Overview:

This workshop will focus on the President's EO on Cybersecurity and discuss its requirements. A key requirement is the implementation of NIST's Cybersecurity Framework (CSF). We will present an understanding of the CSF and NIST's Risk Management Framework (RMF) which is a key component of the CSF. The CSF and RMF are critical for the federal government in its efforts to mitigate risk within enterprise information systems. The workshop will provide detailed guidance on the integration of the CSF and RMF into a holistic Cybersecurity solution. In addition, the workshop will address the EO reporting requirements for the first 90-day report and the other reports identified in the EO.

Hear from industry experts and government officials tasked with implementing robust cybersecurity and risk management strategies along with learning how NIST's CSF and RMF can be effectively implemented to reduce the risk of cyber-attacks. Listen to a government panel of CIOs and CISOs to understand the challenges they are facing on a day-to-day basis and how implementation of NIST's CSF and RMF helps them identify the risks and what it takes to mitigate those risks. Gaining insights from the panel and peer interactions at the workshop should be invaluable in implementing the President's EO and moving the needle forward in improving federal cybersecurity.

What You Will Learn:

- **The approach used by the NIST RMF**
- **The value of the integration of the NIST RMF with the NIST CSF**

- **Development of agency Risk Management Strategies**
- **Changes in federal information system authorization requirements and guidelines**
- **Guidance into what agencies can expect from the NIST RMF and new CSF processes**
- **Importance of Risk Assessments (RA), Security Control Assessments (SCA), and Security Testing & Evaluation (ST&E)**
- **Security control categorization and how it is used to manage risk**
- **NIST SP 800-53A, Guide for Assessing the Security Controls in Federal Information Systems and Organizations: Building Effective Security Assessment Plans; NIST SP 800-37 Rev. 1 Guide for Applying the Risk Management Framework to Federal Information Systems: A Security Life Cycle Approach and NIST SP 800-39 Managing Information Security Risk**
- **Reporting Requirements for the Executive Order**
- **Best Practices for Responding to the Executive Order**

Why You Should Attend

- **Review the key steps within the NIST RMF and CSF**
- **Obtain practical knowledge of how NIST RMF and CSF are incorporated into information system security**
- **Gain insight into conducting and implementing NIST RMF and CSF in your organization**
- **Collect information on how NIST frameworks can be leveraged to enhance the security of your organization**
- **Learn how risk management and cybersecurity are essential for regulatory compliance**
- **Learn from risk management, security and OIG colleagues in Federal, State and Local Governments**
- **Learn how other Agencies are responding to the EO**

Who Should Attend:

- **CIOs, CISOs and Staff**
- **IT security and risk management practitioners**
- **IGs and Staff**
- **Program Managers responsible for risk management**
- **Government Employees who want to better understand organization risk management**
- **Executives who oversee risk management for the**

government

- **All government executives, managers and staff who need to better understand risk management and implementing the President's Executive Order**

CEUs Awarded Upon Workshop Completion

**Potomac Forum is an Authorized Provider
of ICS(2) Credits**

Press is NOT Invited to Register or Attend

"Early Bird Reduced Registration to June 17th

"Send-A-Team" Registration Fees

No Press to Promote Candid Discussion

Registration and Information:

www.potomacforum.org

Call: (703) 683-1613

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"Government Cyber Security" Training Workshop Email List.**

Thank You.

Future Potomac Forum Training Workshops

1. Managing Government Records (RM) Training Workshop XIV

Agency Self Assessments are in to NARA

-- How Can You Improve Your Scores?

Tuesday, June 20, 2017

**2. How to Meet the Workforce Requirements of the President's
Executive Order 13781 Training Workshop**

**What Federal Executives, Managers, and Supervisors Need to Know to
Support the Goals of the Executive Order for Reforming the Federal
Government and Reducing the Federal Civilian Workforce**

Wednesday, June 28, 2017

**3. Implementing the President's Cybersecurity Executive Order (EO)
Training Workshop**

**A "How To" Workshop to Implement the Requirements
of the EO and its Reporting Requirements**

Wednesday, July 12, 2017

**All Workshops at the
Willard InterContinental Hotel
Washington, D.C.**

This email was sent to: jackson.ryan@epa.gov

Go [here](#) to leave this mailing list or [modify](#) your email profile.

We respect your right to privacy. [View](#) our policy.

This email was sent by: **Potomac Forum, Ltd.**
400 North Washington Street, Alexandria, Virginia, 22314, USA

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Lehman, Rob
Sent: Tue 6/6/2017 11:37:35 AM
Subject: Morning Joe

Your boss did a great job. He was balanced and didn't get bullied. He was more knowledgeable than the panel. Well done

Sent from my iPhone

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: J. Steven Hart
Sent: Thur 6/1/2017 7:15:34 PM
Subject: Paris Climate Change Accord

the Daily Beast gets an early report??

Multiple sources are reporting that WH energy policy adviser has informed the Hill of the move.

<http://www.thedailybeast.com/trump-will-announce-us-withdrawal-from-paris-accord?via=desktop&source=copyurl>

The United States will withdraw from the Paris Climate Accord, President Donald Trump will announce at a Rose Garden speech this afternoon. On a conference call with Capitol Hill staffers ahead of the speech, White House energy policy adviser Michael Catanzaro confirmed that “the United States is getting out of the Paris agreement.” Trump, Catanzaro said, “will be open to and will immediately be looking for a better deal.” A source provided The Daily Beast with the call-in information. The process could be a lengthy one. Catanzaro said the administration will follow the steps for withdrawal laid out in the deal itself. “We will initiate the process, which, all told, takes four years in total. But we’re going to make very clear to the world that we’re not going to be abiding by what the previous administration agreed to.” Trump’s withdrawal from the accord fulfills a major campaign promise, and dovetails with his “America First” mantra, a point stressed by White House deputy communications director Raj Shah in a separate conference call with conservative think tanks and pundits. “The president’s action today is going to be in keeping with the president’s pledge to put American workers first,” Shah said. He asked those on the call write statements, op-eds, and tweets supporting the president’s decision. “I can’t explicitly state what the president is going to announce in an hour and a half, but I can say that I doubt folks on this call will be disappointed,” Shah assured them.

—Lachlan Markay

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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Jay Martin
Sent: Mon 6/12/2017 6:48:56 PM
Subject: Follow Up

Ryan-

Hope you are doing well following a successful trip to Italy by Administrator Pruitt. I left a phone message at your office earlier today, but would appreciate a quick call once you have had a chance to complete some catch up. I can be reached at 202-347-5774.

Thanks in advance,

Jay



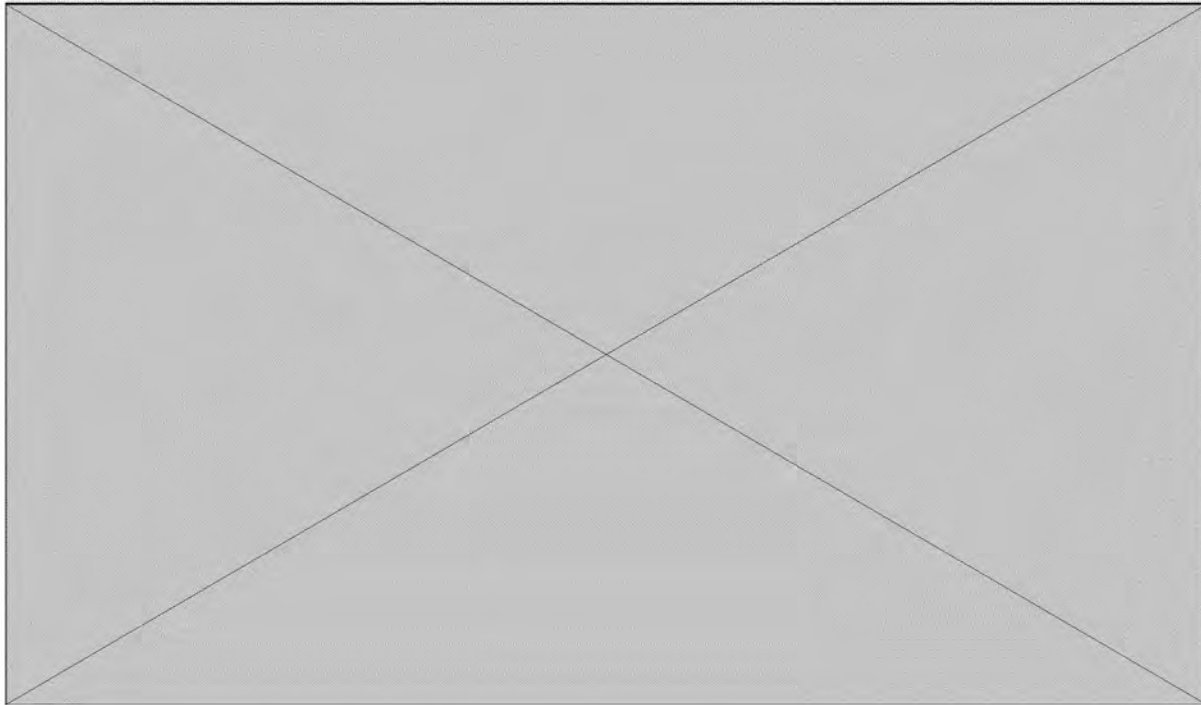
Jay Martin
VP – Government Affairs

1455 Pennsylvania Avenue NW, Suite 320

Washington D.C. 20004

t: 202.347.5774 | m: Ex. 6 - Personal Privacy
jay.martin@conturaenergy.com

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Strategy Execution Resources
Sent: Thur 6/15/2017 5:30:11 PM
Subject: 4 ways to avoid a failed strategic plan



Ryan,

If your strategy is sound, but you aren't seeing it translate into business results, it's clear you're facing an execution issue. Alternatively, if your entire management team is executing with precision, but results are subpar, you need a better plan— **a foolproof plan.**

[Download this guide](#) to learn a new approach that will elevate your strategic planning process, and ultimately achieve results.

[DOWNLOAD NOW](#)



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<http://www2.achievet.com/e/147781/company-achievet/24yx5q/154724321>

To: Maisano, Frank[frank.maisano@bracewell.com]
From: Maisano, Frank
Sent: Mon 6/12/2017 5:52:25 PM
Subject: Jun 12 PRG Energy Update: Budgets, Ethanol, Events

Friends,

Another exciting weekend with a \$450 million POWERBALL winner (not me), Pittsburgh winning the Stanley Cup for the second straight year and scoring a winner in the Belmont. While I had the Win/Place order reversed, I still won a \$5 *Exacta* (which paid out \$115) on Saturday as *Tapwrit* outdueled *Irish War Cry* to take the third jewel of the Triple Crown, following in the footsteps of his sire *Tapit*. Of course, my *trifecta* was snake-bitten by *Lookin At Lee* for the third straight race as this time I had him in the box and he faded badly (Yes, I left him out of the Derby/Preakness boxes and should have known this would happen). Anyway, at least I didn't lose money this week finishing slightly ahead. Finally, tonight, Golden State goes for the clincher tonight at home and golf's US Open starts on Thursday at Erin Hills in Wisconsin.

It is a very busy week in DC, starting tomorrow with the rescheduled confirmation hearing at Senate EPW for NRC Commissioners and EPA enforcement head Susan Bodine. They are expected to vote Thursday to move NRC Chair Kristine Svinicki to fast-track her approval before the June 30 expiration of her current term. We also expect a vote on FERC nominees soon as well (before July 4th recess). Senate Energy canceled its permitting hearing slated for tomorrow. On Wednesday, Senate EPW tackles the RVP ethanol issue (even as rumors continue that RVOs will soon be released by EPA) and Senate Commerce looks at automated vehicle technology and hurdles for testing and deployment in the US.

The budget process launches in earnest this week after a few hearings last week. This week there are 18 hearings highlighted by a visit by Scott Pruitt to House Interior/Enviro Approps on Thursday. Secretary of State Tillerson will appear at Senate Foreign Relations tomorrow and Ag Secretary Perdue is at Senate Ag tomorrow afternoon. Secretary Chao make two separate visits to the Senate and House Transportation committees.

Off the Hill, EEI gathers in Boston today through Wednesday for its annual conference, while BP launches its annual Energy Statistics review tomorrow and will discuss it in a couple of events on Thursday. For the future, Secretary Moniz returns to Press Club next Wednesday to discuss energy innovation (I'm hosting him for an NPC newsmaker event), Statoil's Annual Energy perspectives report is next week as well and EIA's annual Energy Conference is right around the corner, too.

I also thought you might find Amy Harder's latest Harder Line column interesting since it looks at the importance of accurate media coverage of climate change, a topic near and dear to many of all our discussions over the years and one she is taking up at today's Citizens Climate Lobby conference here in DC. And keep your eye peeled for the Business Council for Sustainable Energy weighing into energy/environment budget debate soon.

Finally, the FireFly Music Festival starts on Thursday in Delaware and carries through four days of music. This is my wife's favorite event, so when she heads out Thursday, my kids and I will be living large, eating as much great carry-out (KFC Buckets and Ledo Pizza are on the agenda) as possible, watching movies late into the night and listening to loud music in the House. Now that's livin'. Which reminds, on Friday, I'm hosting Newt Gingrich for a National Press Club event about his new book: *Understanding Trump*. It should be insightful, so please attend or pass on to your many colleagues covering the political angles...

Call with questions...

Best,

Frank Maisano

(202) 828-5864

C. Ex. 6 - Personal Privacy

FRANKLY SPOKEN

"The successful development of new energy technologies – and the jobs they create – depends on effective partnerships between public and private sectors. A significant component of those partnerships is the proper alignment of investments along the technology development process. Leveraging its expertise, the private sector has invested billions of dollars to commercialize new energy investments. Critical to this process is the feedstock supplied by

federal investments, especially in the early-stage and high-risk research.”

A Letter from 14 CEOs, including major Corporations like Southern, Air Liquide and DuPont, as well as Chamber CEO Tom Donahue, urging Congressional appropriators to support funding for energy innovation programs. The letter was sponsored by the Bipartisan Policy Center's American Energy Innovation Council.

IN THE NEWS

CEOs Urge Congress to Protect Energy Innovation – Late last week, the Bipartisan Policy Center's American Energy Innovation Council sent a letter to Congress urging their support for the Advanced Research Projects Agency-Energy and research and development programs to ensure that the United States maintains its competitive edge. In a letter, 14 energy and economic heavy hitters, including Southern CEO Tom Fanning, Air Liquide CEO Mike Graff and Chamber of Commerce head Tom Donahue said early federal research helped develop hydraulic fracturing technologies as one example of why the private sector alone can't fund critical innovation in energy. Other signers include Lockheed's Norm Augustine, Exelon's Chris Crane, Shell's Bruce Culpepper, former Commerce official John Doerr, Pioneer's Tim Dove, PG&E's Anthony Early, Clean Line CEO Michael Skelly, former DuPont CEO Chad Holliday, NEI's Maria Korsnick, AGA's Dave McCurdy and David Holt of the Consumer Energy Alliance. I can send PDF if you need it.

New Research Initiative to Update, Improve Social Cost of Carbon – Resources for the Future (RFF) is launching a multi-year, multidisciplinary research initiative to improve the methodology used to calculate the social cost of carbon—an economic tool used to quantify both the benefits to society of reducing carbon dioxide emissions from the atmosphere and the harm to society from emitting more carbon dioxide. The social cost of carbon informs billions of dollars of policy and investment decisions in the United States and abroad—making it critical that estimates of the measure are transparent and based on the best available science and methodology. The following few examples highlight use of the social cost of carbon across several jurisdictions. Along these lines, RFF's new initiative will support and inform policy design choices and evaluations of actions that affect climate change by decisionmakers and analysts worldwide.

Platts Cap Crude to Look at Paris, Oil Exports – The current edition of Platts Capitol Crude will look at whether President Trump's decision to pull the US out of the Paris climate

agreement hurt national security. It also looks at whether US crude exports are actually benefitting US allies and if we should be selling off the Strategic Petroleum Reserve. Andrew Holland, director of studies and a senior fellow at the American Security Project, answers these questions and more on this week's Capitol Crude.

Defense Energy Advisor Appointed – President Trump announced his intent to nominate Lucian Niemeyer late Friday to serve as assistant secretary of Defense for Energy, Installations and Environment. Niemeyer was previously a long-time staffer on the Senate Armed Services Committee where he ran the military installation portfolio and conducted oversight of federal energy and environmental programs.

Immelt to Step Down at GE – General Electric CEO Jeff Immelt is stepping down effective August 1, after 16 years of leading the company. He will be replaced by John Flannery, who currently heads the industrial giant's health care division.

ON THE SCHEDULE THIS WEEK

EEI Holds Annual Meeting – The Edison Electric Institute will launch its annual conference in Boston today through Wednesday at the Copley Marriott. Keynote speakers include NBC's Tom Brokaw, MIT Digital Economy Co-Director Andy McAfee, retired general Keith Alexander and former White House advisor and CNN analyst David Gergen. Southern CEO moderates a great breakout session tomorrow morning featuring DOE veteran Pat Hoffman, FERC's Joe McClelland and Oracle Chief Security Officer Mary Ann Davidson.

Climate Lobby Meetings, Hill Day Set – The Citizens Climate Lobby hold its 8th annual conference in Washington, DC on today and tomorrow at the Omni Shoreham. The keynote speaker will be Dr. Anthony Leiserowitz, Director of the Yale Program on Climate Change Communication. Most of tomorrow will be on Capitol Hill.

LNG CEO to Address Forum – The Atlantic Council will host a forum today at Noon looking at how unconventional oil and gas continues to reshape global energy markets. Tellurian LNG CEO Meg Gentle will speak. The conversation will focus on the outlook for US LNG, changes in the LNG market globally, and other trends and drivers.

Security Experts to Address Methanol Policy Forum – The Institute for the Analysis of Global Security (IAGS), the U.S. Energy Security Council (USESC) and the Methanol Institute will hold a Methanol Policy Forum tomorrow at the National Press Club. The Forum will include a special luncheon discussion: Energy Security through Fuel Choice, which features a conversation with the U.S. Energy Security Council experts like former National Security Advisor Robert C. McFarlane, former CIA Director James Woolsey, former President of Shell Oil Company John Hofmeister, former White House Counsel and Ambassador to the EU C. Boyden Gray and former Louisiana Senator and Senate Energy Bennett Johnston. Our friend Joe Cannon and other will speak on panels as well.

Senate Environment Host NRC Nominees, EPA Enforcement Official – After it was postponed last week over paperwork issues, the Senate Environment Committee will host a nomination hearing tomorrow at 10:00 a.m. on three NRC nominees and EPA enforcement chief Susan Bodine. The NRC nominees include current commissioner Kristin Svinicki and new appointees Annie Caputo, a former Exelon Corp. executive who now works for the EPW Committee and David Wright, a former South Carolina Public Service commissioner. Then on Thursday, the Committee will hold a business meeting to the nomination of current NRC Chair Kristine Svinicki, who needs to be reappointed by June 30th to continue her service.

CANCELED - Senate Energy Permitting Hearing – The Senate Energy and Natural Resources Committee has cancelled its hearing slated for tomorrow on the federal permitting processes. No word on reschedule yet.

House Ag to Look at Watershed Issues – The House Agriculture Committee's Conservation and Forestry Subcommittee holds a hearing tomorrow at 10:00 a.m. on small watershed infrastructure. The hearing will look at continuing the current mission, and building upon successes.

Forum to Look at Global Risks – Tomorrow at 1:00 p.m., the Stimson Center and Georgetown's Institute for the Study of Diplomacy will hold a strategic conversation analyzing the global risks presented to human security by environmental change, as well as the findings and recommendations from the recently released report - "New Challenges to Human Security: Environmental Change and Human Mobility." The event will be a discussion analyzing the global risks presented to human security by environmental change, as well as the findings and recommendations from the recently released report — *New Challenges to Human Security: Environmental Change and Human Mobility*

Post Forum to Look at Food Systems – *The Washington Post* will host a forum tomorrow at 3:30 p.m. that brings together entrepreneurs, food industry executives, scientists and farmers to discuss how technology and science are changing our modern food systems. They will explore the business practices that are driving consumer demand, the innovations and new ideas that are shaping the future of what – and how – we eat and consider the policies that will regulate an increasingly complex global food market. Speakers will include USDA Economic Research Service Administrator Dr. Mary Bohman, EWG’s Ken Cook, Seth Goldman of Honest Tea, Hungry Harvest CEO Evan Lutz, Marty Matlock of the University of Arkansas, DC Chef/ Restaurateur Spike Mendelsohn, former U.S. Deputy Secretary of Agriculture Kathleen Merrigan and Veronica Nigh of the American Farm Bureau Federation.

NAS to Discuss Social Cost of Carbon – The US National Academies of Sciences, Engineering, and Medicine will host members from its committee on Assessing Approaches to Updating the Social Cost of Carbon as well as experts from federal and state governments and academia on Wednesday to discuss approaches to valuing climate damages. The symposium is organized into three panels: the first to review the committee’s recommendations, the second to hear from academics who are developing estimates of the social cost of carbon, and the third to discuss federal and state approaches to valuing climate damages.

Senate Commerce to Look at AVs – The Senate Committee on Commerce, Science, and Transportation, will convene a hearing on Wednesday at 10:00 a.m. on paving the way for self-driving vehicles. The hearing will explore automated vehicle technology and hurdles for testing and deployment in the United States. The hearing will also examine state and federal roles to ensure safety while promoting innovation and American competitiveness. Witnesses will include Alliance of Automobile Manufacturers’ CEO Mitch Bainwol, Rob Csongor of NVIDIA Corporation, John Maddox of the American Center for Mobility and MADD’s Colleen Sheehey-Church.

RFF to Host Webinar of RGGI Emissions Issues – Resources for the Future (RFF) will hold a webinar Wednesday at 10:15 a.m. to discuss emissions containment reserve (ECR) concepts with the Regional Greenhouse Gas Initiative. Researchers at Resources for the Future (RFF) and the University of Virginia have been working hard on further analysis and modeling of the ECR and the webinar will present the results of this research; a final report will be released in early summer. The webinar will begin with an introduction and brief review of the ECR concept. Dallas Burtraw (RFF) and William Shobe (UVA) will then present results from simulation modeling and laboratory experiments that illustrate how the Regional Greenhouse Gas Initiative (RGGI) market would work with the addition of an ECR. Following the presentations, representatives from industry, environmental advocacy groups, think tanks, and state environmental agencies will respond to the analyses with a look at what they view as

opportunities, as well as potential challenges, of introducing an ECR program as part of RGGI. The webinar will include with time to respond to questions and comments from the audience.

Senate to Look at RFS – The Senate Environment Committee will hold a hearing on the Renewable Fuels Standard on Wednesday targeting legislation by Sen. Fisher on renewable fuels, S 517, the Consumer and Fuel Retailer Choice Act. Witnesses will include long-time renewable fuels advocate Brooke Coleman, Jonathan Lewis of the Clean Air Task Force, Sheetz EVP Mike Lorenz, Briggs & Stratton's Todd Teske and Janet Yanowitz of Ecoengineering.

House Energy to Look at Energy Planning – The House Energy & Commerce Committee's Subcommittee on Energy will hold a hearing on Wednesday at 10:00 a.m. getting states' perspectives on energy security planning, emergency preparedness and state energy programs.

Senate Energy to Discuss Hydro Legislation – The Senate Energy Committee's Water and Power Panel will hold a legislative hearing on Wednesday at 2:00 p.m. looking at several hydropower bills. Witnesses will include Scott Cameron, acting assistant secretary for water and science, Department of the Interior; Mark Gabriel, administrator and CEO, Western Area Power Administration; Harlowton, Mont., Mayor Jeff Sell; Tom Fisher, president, Patterson Lake Homeowners Association; Mike Hamman, chief engineer and CEO, Middle Rio Grande Conservancy District; and Christopher Wynn, vice president, Brookfield Renewable Energy Group.

RCP to Host Energy Workforce Conversation – On Thursday at 9:00 a.m. at the Columbus Club, RealClear Politics will convene experts spanning the commercial construction industry and its adjacent sectors to analyze industry success and workforce development.

Forum to Launch BP Energy Review – The Atlantic Council will launch of the 2017 BP Statistical Review of Energy on Thursday at 9:30 a.m. featuring BP Chief Economist Spencer Dale. From the shift to low-carbon fuels to the proliferation of renewables to the future of coal, BP's Statistical Review of Energy continually provides authoritative and in-depth information and insightful analysis that is invaluable in understanding changing energy markets and production and consumption patterns.

Pruitt to Testify on EPA Budget – The House Appropriations Interior-EPA subcommittee will

host EPA Administrator Scott Pruitt on Thursday at 11:00 a.m. to testify on the White House's EPA Budget, which proposed cutting the agency's budget by 31%. Pruitt will be joined by Holly Greaves, a landing team member who works on budget issues.

BP's Dale Also Addresses NatGas Roundtable – The Natural Gas Roundtable will also BP's Dale as its guest speaker at its next luncheon at Noon on Thursday where he will continue the public rollout of this year's BP Statistical Review of World Energy Markets.

Gingrich to Discuss Politics, Book – Former Speaker of the House and 2012 presidential candidate Newt Gingrich will appear at a National Press Club Headliners Event on Friday at 10:00 a.m. in the club's First Amendment Lounge to discuss his new book, *Understanding Trump*. I will be hosting the event on behalf of the NPC. In *Understanding Trump*, Gingrich shares what he learned from more than two years helping Donald J. Trump throughout his presidential campaign, during his transition from presidential candidate to Commander in Chief, and in his first few months in office. Gingrich provides a unique perspective on how the new president's past experience as a business leader has shaped his political agenda and approach to governing the country.

WCEE to Look at Western Energy Markets – The Women's Council on Energy and the Environment will host a forum on Friday at Noon at FERC to get an overview of the Western Energy Imbalance Market from FERC staff Elizabeth Olson who worked in the California electricity market during EIM implementation.

IN THE FUTURE

Ukraine Gas Leaders to Address Forum – Next Monday at 3:30 p.m., the Atlantic Council's Dinu Patriciu Eurasia Center and Global Energy Center will hold a conversation on the future of Ukraine's energy sector with Naftogaz leadership. On May 31, Ukraine's Naftogaz won a victory over Russia's Gazprom in the international arbitration court in Stockholm. Naftogaz won on all three counts the court considered. On the heels of this extraordinary development, the Atlantic Council will bring together Naftogaz Chief Executive Officer and Chief Commercial Officer, Andriy Kobolyev and Yuriy Vitrenko, and fellow energy experts, to discuss Ukraine's energy sector – Nord Stream 2, implications of the arbitration between Naftogaz and Gazprom in Stockholm, and energy reforms.

Zinke to Talk Interior Budget at Senate Energy – The full Senate Energy and Natural Resources Committee will convene a hearing next Tuesday to examine the president’s budget request for the Department of the Interior for Fiscal Year 2018. Secretary Ryan Zinke will appear.

Forum to Look at AVs – The Information Technology and Innovation Foundation and the Washington Embassy of the Federal Republic of Germany will hold a forum next Tuesday, June 20th at 10:00 a.m. to discuss key policy and commercial issues and insights on how enterprises and policymakers from the U.S. and Germany are enabling the future of mobility. Emerging digital technologies are enabling connected and autonomous vehicles (AVs). These technologies will reshape the future of mobility, reducing accidents and producing an estimated \$1 trillion-a-year economic benefit in the United States alone. But to achieve that vision, policymakers will need to create a regulatory environment that encourages experimentation while ensuring high standards of road safety, as Germany has recently done by developing a policy framework for autonomous vehicle research and experimentation. Speakers include Michael Bültmann of HERE Deutschland, ITIF’s Stephen Ezell and German Federal Ministry of Transportation’s Tobias Miethaner.

WAPA to Host Steel Discussion – The Washington Automotive Press Assn is holding a forum at the National Press Club Tuesday June 20th at Noon featuring the Steel Market Development Institute. Dr. Jody Hall, vice president of the automotive market for the Steel Market Development Institute, will discuss advancements in steel grades and how their application in the vehicle structure helps protect occupants in the event of a crash and is easier to repair than vehicles made with alternative materials.

Forum to Look at OPA Reform – The Environmental Law Institute will hold a forum on Tuesday, June 20th at 12:00 p.m. looking at updating the Oil Pollution Act (OPA) in 1990. OPA was passed following the Exxon Valdez oil spill, to strengthen the federal government’s ability to prevent and respond to oil spills, establish financial resources to aid response, and raise standards for contingency planning. The program will cover OPA issues raised by pipeline projects, and by the Trump Administration’s efforts to increase production from offshore and federal lands and to restrict the definition of waters of the United States in ways which may reduce the scope of contingency planning requirements for inland locations. Speakers will also discuss key decisions from the past year involving the OPA and related federal statutes, including decisions about recoverable damages, citizen suits, and presentation of claims to the Oil Spill Liability Trust Fund, as well as decisions in enforcement cases against vessels involving the use of “magic pipes” to deal with oily bilge water. The expert panel includes NOIA’s Randall Luthi, Cyn Sarthou of the Gulf Restoration Network and Richard Udell, who serves in DOJ’s Environmental Crimes Section.

BPC Innovation Forum to Feature Sen Alexander, Southern ClearPath Experts – The Bipartisan Policy Center’s Energy Innovation Commission will hold a conversation on Tuesday June 20th at 3:00 p.m. in 430 Dirksen about the energy innovation process, with leading industry voices discussing whether smart, targeted approaches for limited federal resources can complement private sector investments in pursuit of advanced energy technologies. President Trump’s recent budget proposal for fiscal year 2018 has sparked a conversation about the appropriate federal role in supporting the nation’s innovators. As the congressional appropriations process begins in earnest, energy research programs within the Department of Energy are among those under scrutiny, despite a history of broad, bipartisan support. Sen. Lamar Alexander will offer Keynote remarks, followed by a panel discussion with ClearPath’s Rich Powell, Air Liquide’s Mike Rosen and Southern’s Steve Wilson moderated by Axios’ Ben Geman.

WCEE to Host Litigation Roundtable – The Women’s Council on Energy and the Environment hold its Third Annual Litigation Roundtable with the women Administrative Law Judges of the Federal Energy Regulatory Commission (FERC) and the Environmental Protection Agency (EPA). The Judges will discuss their experience as Administrative Law Judges, interesting developments in their careers, who mentored them along the way and who they themselves mentored, and share the “Dos & Don’ts” regarding hearings and settlement conferences.

Wilson Forum Look at Arctic Relations – The Wilson Center hold its Arctic Circle Forum on Wednesday and Thursday, June 21-22, beginning each day at 8:30 am and looking at the U.S. and Russian roles in the Arctic. The Arctic is a region of international dialogue and potential competition, of varied challenges and diverse opportunities. It is also a region that is gaining in both geopolitical significance and public awareness every day. The complex relationship between the United States and Russia, along with the approaches of the six other Arctic nations, will continue to shape the region’s social, economic, political and environmental issues far into the future. The event will explore the crucial Arctic relationship and the implications for all Arctic nations, the communities that call the region home, and the countries and organizations that have a vested interest in a peaceful and sustainable Arctic.

BNEF to Release Energy Outlook – The CSIS Energy and National Security Program is hosting the launch of Bloomberg New Energy Finance’s (BNEF) New Energy Outlook 2017 on June 21st at 10:00 a.m. The report is BNEF’s annual economic forecast for the world’s power mix to 2040. Built over nine months, it is the result of a major collaboration of more than 65 market and technical experts from BNEF’s 11 offices around the world. Seb Henbest (NEO Lead

Author and Head of Europe, Middle East, & Africa; BNEF) and Elena Giannakopoulou (Lead Energy Economist; BNEF) will present on the NEO 2017 findings, followed by Q&A and discussion.

Press Club to Host Former Energy Sect Moniz – The National Press Club will host a Newsmaker on Wednesday June 21st at 10:00 a.m. in the Club's Lisagor Room featuring former Secretary of Energy Dr. Ernest Moniz. Moniz will propose ways to maintain the American leadership edge on energy innovation. Moniz also is expected to announce the formation of a new non-profit organization "The Energy Futures Initiative," that aims to foster innovation in global energy systems. According to the creators, EFI will be a non-partisan, think tank and advisory firm working across all energy sources to provide evidence-based analysis on decarbonizing energy systems, creating high-paying energy jobs, and finding ways to make energy infrastructure and supplies more secure.

CA Energy Forum Set – Advanced Energy Economy's (AEE) annual California energy policy event, *Pathway to 2050*, will be held on June 21st in Sacramento. The event brings together an influential group of advanced energy business leaders and state policy-makers to discuss opportunities to accelerate California's economy through the growth of advanced energy. Speakers will include our friends Caroline Choi of SoCalEd, Dan Morain of the *Sacramento Bee* and Greentech's Katie Fehrenbacher. Other speakers include SoCal Ed CEO Kevin Payne, GE's Deb Frodl, Cal Assembly Speaker Kevin de Leon, CPUC President Michael Picker, Cal Energy Commissioner Janea Scott and Tom Steyer.

Senate Energy to Hear from Perry on DOE Budget – The full Senate Energy and Natural Resources Committee will convene a hearing on Thursday June 22nd at 10:00 a.m. to examine the president's budget request for the Department of Energy for Fiscal Year 2018. Secretary Perry will testify.

WAPA to Host Ride/Drive of Ioniq – WAPA also will host a lunch and drive on June 22 at 11:00 a.m. at River Farm in Alexandria, VA featuring the all-new Hyundai Ioniq Electric and Hybrid line of vehicles

CSIS to Host Statoil Energy Report – The CSIS Energy and National Security Program will host a forum on June 22nd at 1:00 p.m. featuring Eirik Wærness, Senior Vice President and Chief Economist of Statoil, to present the company's newly released *Energy Perspectives 2017*. The *Energy Perspectives* report summarizes different narratives about global energy demand and

energy mix for the future decades, scenarios, based on different assumptions about regional and global economic growth, conflict levels and implications, technological development and energy and climate policies. In the 2017 version, models have been adjusted with last year's developments in the energy and climate policy area, technology costs and maturity, more thorough assessments of GDP forecasts, as well as included adjustments made to historic global CO2 emissions. The modelling runs to 2050 with 2014 as baseline year, and provides a forecast for global energy demand and energy mix, economic growth, CO2 emissions, and more.

Forum to Hear Energy Demand Expert – On Friday June 23rd at Chinatown Garden, the National Capital Chapter of the US Energy Economists will host physicist, venture capitalist, author, government advisor, and senior fellow at the Manhattan Institute, Mark Mills. Mills will discuss energy demand disruptions and the aspirations versus the reality. Mills says we are nearing an era of 'peak energy demand' requires believing that innovation is over, and similarly that we've seen the end of normal economic and social behaviors. Technology and demographic trends in fact suggest that the recent past is in an interregnum, not a 'new normal' when it comes to energy demand.

EIA Energy Conference Set – The 2017 EIA Energy Conference is scheduled for June 26-27 in Washington, DC.

Smart Cities Conference Headed for Austin – The 2017 Smart Cities Connect Conference will be in Austin, TX at the Convention Center on June 27th. The event convenes more than 200 global city leaders to prospect and partner with innovative technology and service providers.

Global Security Forum Set – The Center for a New American Security hosts its 2017 Annual Conference in partnership with The Washington Post on Wednesday, June 28th at The Mayflower Hotel. This year's conference will bring together U.S. national security policymakers and experts to highlight major divides and identify potential bipartisan solutions. CNAS is an independent and nonpartisan research institution that develops strong, pragmatic and principled national security and defense policies.

JULY 4th Recess – June 30th to July 11th

Congressional Renewable Expo Set – The 20th annual Congressional Renewable Energy and Energy Efficiency EXPO and Policy Forum will be held on Tuesday, July 11th from at 9:30 a.m. to 4:30 p.m. In Rayburn.

Community Solar Forum Set for Denver – The Coalition for Community Solar Access will host the first annual National Community Solar Summit in Denver on July 26 – 28. A few highlights for Denver include energy company CEOs including Tom Matzzie of CleanChoice Energy, Jesse Grossman of Soltage, Zaid Ashai of Nexamp, Rick Hunter of Microgrid Energy and Steph Spiers of Solstice. Other speakers include energy company leaders Hannah Masterjohn of Clean Energy Collective, Dan Hendrick of NRG Energy, Adam Altenhofen of US Bank, Adam Capage of 3 Degrees and Lori Singleton of Salt River Project.

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Chiang, Amy
Sent: Wed 6/14/2017 3:19:47 AM
Subject: Meeting/call

Ryan,

Do you have time for a quick call/ meeting next week to talk about the June 28th meeting with Administrator Pruitt?

Thanks!

Amy

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: DeLaquil, Mark
Sent: Thur 6/15/2017 5:06:09 PM
Subject: CERCLA Financial Responsibility Proposal

Dear Ryan,

I hope all is well. I am reaching out concerning EPA's CERCLA financial responsibility proposal. I represent Asarco LLC, which will be filing comments on the proposal. Asarco would also appreciate the opportunity to discuss its concerns with you or another appropriate EPA official.

Duane Yantorno, Asarco's Corporate Manager for State and Federal Regulatory Affairs, will be in Washington from Arizona in late July so I am hoping to schedule the meeting for either July 25, the morning of July 26, or July 28.

Please let me know if any of those dates work schedule-wise. If not, I can propose alternative dates. Also, if there is any other information I can provide to assist, please let me know.

One last note so that you are fully informed, in February I raised the possibility of a meeting with Kevin Minoli. We tabled the issue at that time due to the extension of the comment period.

Best regards,

Mark

Mark DeLaquil
Partner

BakerHostetler
Washington Square

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mdelaquil@bakerlaw.com

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To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Dravis, Samantha[dravis.samantha@epa.gov]
From: David Crane
Sent: Mon 6/5/2017 10:34:48 AM
Subject: Re: 6.7-8 Meeting Request for Pete Regan (DEPA) and Roger Kelly (Continental)

Ryan and Samantha:
I hope that you had a great weekend.

Per below and appreciating how busy you'all must be I was wondering if you might be bale to point me in the right direction in terms of a June 7/8 meeting for Roger Kelly from Continental and Pete Regan from Domestic Energy Producers Alliance. (Blu will be in town on the 7th as well.

I have reinserted the regulatory issues that Pete and Roger are hoping to discuss.

Any help or guidance would be much appreciated.

Thank you.

David

David Crane

1. Oil and Gas Effluent Limitation Guidelines and Standards

The final rule entitled "Effluent Limitations Guidelines and Standards for the Oil and Gas Extraction Point Source Category" published in the Federal Register on June 28, 2016 largely ignored input from industry and should be rescinded. A categorical prohibition on the practices of the unconventional oil and gas industry limits innovation and imposes unnecessary restrictions to the industry.

2. Quad Oa EPA Methane Rule.

This rule follows the original Quad O rule passed in the 2012-2013 timeframe and is primarily directed at methane as a green house gas/pollutant. Passed under the NSPS (New Source Performance Standard) review authority of the Clean Air Act.

3. Social Cost of Carbon (including Methane)

The March 28th Executive Order on "Promoting Energy Independence and Economic Growth " directed agencies against consideration of climate change or green house gases in regulatory development or other energy considerations. This directive affects the Quad Oa rule among others.

4. RCRA Waste Exemption

The EPA has committed (2016 Obama EPA) to revisiting this matter and the environs surely expect some serious changes. This issue was handled in the states through state review. Need to see where they are, if anywhere, on this. Need to make sure staff isn't cooking something up.

Partner
TG&C Group, LLC
The Homer Building
601 13th Street NW, 11th Floor North
Washington, DC 20005

C { Ex. 6 - Personal Privacy }

On Jun 2, 2017, at 11:02 AM, David Crane <david@tgandcgroup.com> wrote:

Ryan and Samantha:

Congratulations on the big Paris Agreement announcement yesterday. I thought your boss did a terrific job, both the Administrator and the POTUS.

I know you guys have been swamped but wanted to circle back on the below to see if we could get something on the books for the 7th or 8th. If the 7th Blu and Pete will join Roger. If the 8th It would be myself and Roger Kelly from Continental.

Right now on the 7th we have an 11am at Treasury and a 5pm at Interior but otherwise flexible. EPA is a top priority for us so am hoping to plug something in and then build the rest of our schedule around same.

Thank you and please let me know if I can provide any additional information.

David

David Crane

C { Ex. 6 - Personal Privacy }

On Jun 1, 2017, at 7:32 AM, David Crane <david@tgandcgroup.com> wrote:

Hey Ryan;

Good Morning. Appreciating that your in-box is likely flooding every day I thought I

would follow up on the below - put it back at the top of the box at least for a couple of minutes. Any help or direction would be much appreciated.

Thank you.

David

David Crane

Partner
TG&C Group, LLC
The Homer Building
601 13th Street NW, 11th Floor North
Washington, DC 20005

C Ex. 6 - Personal Privacy

On May 31, 2017, at 4:54 PM, David Crane <david@tgandcgroup.com> wrote:

Ryan:

I hope that your week is going well.

A small group of Domestic Energy Producers Alliance guys are coming in town next week with a focus on regulatory issues. Roger Kelly from Continental will be heading up the issue discussion. Pete Regan and Blu are coming as well though Blu might be running a separate schedule. I'm sure you guys will hook up either way on your own.

I am hoping you might be able to plug me in to the right staff at the EPA for the appropriate issues for purposes of scheduling a meeting? It would be a big help. We'll come in prepared. Following is little background Roger prepared on each subject.

Any help or guidance would be much appreciated

Thanks Ryan and please let me know if I can provide any additional information or if I can be of help in any way.

David

David Crane

1. Oil and Gas Effluent Limitation Guidelines and Standards

The final rule entitled "Effluent Limitations Guidelines and Standards for the Oil and Gas Extraction Point Source Category" published in the Federal Register on June 28, 2016

largely ignored input from industry and should be rescinded. A categorical prohibition on the practices of the unconventional oil and gas industry limits innovation and imposes unnecessary restrictions to the industry.

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Partner
TG&C Group, LLC
The Homer Building
601 13th Street NW, 11th Floor North
Washington, DC 20005

C: Ex. 6 - Personal Privacy

To: Hupp, Sydney[hupp.sydney@epa.gov]; Stanko, Joseph[jstanko@hunton.com]
Cc: Dickerson, Aaron[dickerson.aaron@epa.gov]; Woodward, Cheryl[Woodward.Cheryl@epa.gov]; Jackson, Ryan[jackson.ryan@epa.gov]
From: Reamy, Jeff
Sent: Thur 6/1/2017 6:29:46 PM
Subject: RE: 3 PM meeting Friday June 2nd

Thanks for the note and we totally understand. I will check Larry's schedule regarding Monday June 5 and let you know quickly. Conversely he may be back in DC mid-June I will look into that as well. Many thanks I know you all are very busy.

From: Hupp, Sydney [mailto:hupp.sydney@epa.gov]
Sent: Thursday, June 01, 2017 2:20 PM
To: Stanko, Joseph
Cc: Dickerson, Aaron; Woodward, Cheryl; Jackson, Ryan; Reamy, Jeff
Subject: [EXTERNAL]Re: 3 PM meeting Friday June 2nd

Thank you so much for sending! Unfortunately due to some very last minute changes, I don't think the Administrator will be available tomorrow afternoon. Is there any chance you all might have some availability on Monday? I'm so so sorry for the change.

Thank you!

Sent from my iPhone

On May 31, 2017, at 5:38 PM, Stanko, Joseph <jstanko@hunton.com> wrote:

Sydney:

Some final details from our end.

Attendees will be:

Larry Ziemba, Executive Vice President, Refining, Phillips 66

Accompanied by

Jeff Reamy, Vice President, Federal Affairs, Phillips 66

Any day-of information can be sent to Jeff at Jeffrey.M.Reamy@p66.com or by cell Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy Would you let Jeff know the name/number of the contact person that security should call once they are cleared in the North entrance?

Again, thank you very much for your assistance.

Regards,

Joe

<image001.jpg> **Joseph Stanko**

Partner

jstanko@hunton.com

p 202.955.1529

[bio](#) | [vCard](#)

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

hunton.com

From: Hupp, Sydney [<mailto:hupp.sydney@epa.gov>]

Sent: Monday, May 22, 2017 5:25 PM

To: Stanko, Joseph
Cc: Dickerson, Aaron; Woodward, Cheryl
Subject: RE: Meeting Request

Sounds good and can do! Looping in Cheryl to provide logistics!

Sydney Hupp

Executive Scheduler

Office of the Administrator

Ex. 6 - Personal Privacy (c)

From: Stanko, Joseph [<mailto:jstanko@hunton.com>]
Sent: Monday, May 22, 2017 5:12 PM
To: Hupp, Sydney <hupp.sydney@epa.gov>
Cc: Dickerson, Aaron <dickerson.aaron@epa.gov>
Subject: RE: Meeting Request

Also, would about 45 minutes be possible? Thanks again.

 **Joseph Stanko**

Partner

jstanko@hunton.com

p 202.955.1529

[bio](#) | [vCard](#)

Hunton & Williams LLP

2200 Pennsylvania Avenue, NW
Washington, DC 20037

hunton.com

From: Hupp, Sydney [<mailto:hupp.sydney@epa.gov>]
Sent: Monday, May 22, 2017 4:26 PM
To: Stanko, Joseph
Cc: Dickerson, Aaron
Subject: RE: Meeting Request

Around 3PM would be ideal.

Sydney Hupp

Executive Scheduler

Office of the Administrator

Ex. 6 - Personal Privacy (C)

From: Stanko, Joseph [<mailto:jstanko@hunton.com>]
Sent: Monday, May 22, 2017 3:45 PM
To: Hupp, Sydney <hupp.sydney@epa.gov>
Cc: Dickerson, Aaron <dickerson.aaron@epa.gov>
Subject: RE: Meeting Request

Are there particular time windows you need to work with on the 2nd? Thanks.

Joe

<image001.jpg> **Joseph Stanko**

Partner

jstanko@hunton.com

p 202.955.1529

[bio](#) | [vCard](#)

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

hunton.com

From: Hupp, Sydney [<mailto:hupp.sydney@epa.gov>]
Sent: Monday, May 22, 2017 3:33 PM
To: Stanko, Joseph
Cc: Dickerson, Aaron
Subject: RE: Meeting Request

Thank you!

Sydney Hupp

Executive Scheduler

Office of the Administrator

Ex. 6 - Personal Privacy (C)

From: Stanko, Joseph [<mailto:jstanko@hunton.com>]
Sent: Monday, May 22, 2017 2:02 PM
To: Hupp, Sydney <hupp.sydney@epa.gov>
Cc: Dickerson, Aaron <dickerson.aaron@epa.gov>
Subject: RE: Meeting Request

Sydney:

Thanks, I know the Administrator's schedule is complicated enough, but with international travel it's an additional degree of difficulty.

I'll vet this promptly from my end and respond back.

Thanks, much appreciated.

Regards,

Joe

<image001.jpg> **Joseph Stanko**

Partner

jstanko@hunton.com
p 202.955.1529

[bio](#) | [vCard](#)

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

[hunton.com](#)

From: Hupp, Sydney [<mailto:hupp.sydney@epa.gov>]
Sent: Monday, May 22, 2017 1:14 PM
To: Stanko, Joseph
Cc: Dickerson, Aaron
Subject: RE: Meeting Request

My sincere apologies for the delay Mr. Stanko, was trying to sort out his departure for international travel. Do you have any availability left on the 2nd?

Thank you!

Sydney Hupp

Executive Scheduler

Office of the Administrator

Ex. 6 - Personal Privacy (C)

From: Stanko, Joseph [<mailto:jstanko@hunton.com>]
Sent: Friday, May 19, 2017 1:37 PM
To: Hupp, Sydney <hupp.sydney@epa.gov>

Cc: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: RE: Meeting Request

Sidney:

Would it be possible for you to let me know if the June 2nd or June 5th would work for Administrator Pruitt? Mr. Ziemba is happy to work with other dates, but if the June 2nd and 5th are off the table, it will be helpful to know for other scheduling needs.

Thanks for all your assistance.

Joe

<image001.jpg> **Joseph Stanko**

Partner

jstanko@hunton.com

p 202.955.1529

[bio](#) | [vCard](#)

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

hunton.com

From: Stanko, Joseph
Sent: Monday, May 15, 2017 5:50 PM
To: 'hupp.sydney@epa.gov'
Cc: Ryan Jackson (jackson.ryan@epa.gov)
Subject: FW: Meeting Request

Dear Sydney:

I would like to request a meeting with the Administrator for Larry Ziemba, Executive Vice President, Refining, for Phillips 66. Larry has responsibility for the company's refining operations and serves in a leadership position with the American Fuels and Petrochemical Manufacturers Association. He has been working with other refiners and the Auto industry regarding the potential for higher octane fuels and other forward looking fuels issues. A brief bio is set forth below.

Larry is currently scheduled to be in D.C. on Friday June 2nd and Monday June 5th. If those days would not work with the Administrator's schedule, he is happy to work with other days that would be more convenient for Administrator Pruitt.

Lawrence (Larry) M. Ziemba is executive vice president, Refining, for Phillips 66, a diversified energy manufacturing and logistics company. He has 35 years of experience in the oil and gas industry. Before joining Phillips 66 in May 2012, Ziemba previously worked for ConocoPhillips as president, Global Refining, a role he took on after serving as president, U.S. Refining, since 2003. He first joined Phillips Petroleum in 2001 after its acquisition of Tosco and was in charge of handling the integration of the refining operations during the merger with Conoco. Originally from Chicago, he started his career at Unocal's Chicago refinery in 1977. In 1988, he moved to Unocal's Los Angeles corporate headquarters as manager of planning/business development for its downstream business. In 1991, he managed the acquisition of Shell's Carson refinery and subsequently integrated the asset into Los Angeles operations. In 1997, Ziemba joined Tosco as they acquired Unocal's downstream business. In 1999, he was named vice president of Tosco's three San Francisco area refineries. In 2000, he was assigned to handle the acquisition and takeover of the Wood River refinery. He has held a number of industry and community leadership positions including board positions with American Fuels and Petrochemical Manufacturers Association, WRB Refining LP and the Western States Petroleum Association. Ziemba earned a bachelor's degree in mechanical engineering from the University of Illinois-Champaign in 1977 and a Master of Business Administration degree from the University of Chicago in 1985.

Thank you for your consideration,

Joe Stanko

<image001.jpg> **Joseph Stanko**

Partner

jstanko@hunton.com

p 202.955.1529

[bio](#) | [vCard](#)

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

hunton.com

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Leo Jardot
Sent: Thur 6/15/2017 4:41:46 PM
Subject: Budget Hearing

Watching webcast. He's doing a very good job!

Leo Jardot

Alignment Government Strategies

601 Pennsylvania Ave., NW | South Building, Suite 430

Washington, DC 20004

Leo.Jardot@align-strategies.com

T. 202.407.9747 | D. 202.517.1301

www.align-strategies.com

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Rachel Kelley - Finance
Sent: Wed 6/14/2017 12:47:11 AM
Subject: Re: EPA issue in CA

Jackson,

I wanted to see if you or someone on your staff would be able to call Jim Zaleski at Ex. 6 - Personal Privacy to talk about the below EPA issue. Thank you and call me with any questions at either of the numbers below. Thanks!

—
Rachel S. Kelley
West Regional & PAC Finance Director
(202) 863-8533- office
Ex. 6 - Personal Privacy cell

From: Rachel Kelley <rkelley@gop.com>
Date: Thursday, May 25, 2017 at 2:20 PM
To: Jackson Ryan <Jackson.Ryan@epa.gov>
Subject: EPA issue in CA

Jackson,

I hope this finds you doing well. I'm reaching out to see if you can have someone of your staff call Jim Zaleski to talk through an EPA issue he is having in Santa Barbara, CA. Please see below a little background on the issue and his contact info. Please call me with any questions. Thank you!

He wants to talk about a Biological Opinion affecting his local main reservoir in Santa Barbara county where the National Fisheries will increase the amount of water to be released to keep 80 steelhead trout alive downstream of the dam. And he would like to help the EPA in anyway he can if you need him or his input.

Jim Zaleski

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Rachel S. Kelley
West Regional & PAC Finance Director
(202) 863-8533- office
Ex. 6 - Personal Privacy cell

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Henry Darwin
Sent: Wed 6/7/2017 11:04:33 PM
Subject: Re: Immediate Action Required: Report for Fingerprinting

Next week sounds great. Let me know a day and time and I will make myself available.
Henry

On Tue, Jun 6, 2017 at 9:06 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

That's fine. I want to ensure you are ok with an announcement at the appropriate time. I seems like the closer we get to the time the better.

On the reorganization side, let's set up a time next week so you know where we are and why our timeline is. Per the executive order we have to submit a reorganization plan by the end of September for public comment. But we are also moving forward with ideas internally and with a few other departments to streamline joint work. I think it's necessary to plug you into that as soon as possible.

Thanks again.

Ryan.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 6, 2017, at 4:32 PM, Henry Darwin <Ex. 6 - Personal Privacy> wrote:

Thanks Ryan. Looking forward to a discussion about the reorganization plans. I have a few ideas that could make our process improvement journey easier. As for the start date, I was hoping to push it back just one week to July 10. I have a few issues here that I need to wrap up, and figured I wouldn't be able to get much done the 4th of July week anyways. I hope that's OK.

What are your plans for an announcement? I would like to let the Governor and and my colleagues know, but don't want to get out in front of your plans if you have any. I usually shy away from publicity, but I really think my background and the what Administrator is bringing me on to do could benefit the agency and what we plan to accomplish.

Thanks

Henry

On Fri, Jun 2, 2017 at 4:37 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

I'm looking forward to it as well. Is July 3 still good? We received the routine but important final word from Presidential Personnel about your approval a couple of days ago so there's literally no more process involved here. We are ready to have you start. I appreciate the offer on working in advance. What I may do is have a call with you with Byron Brown to bring you up to speed on what we've been doing reorganization-wise so you know what generally we have to submit to OMB by the end of June. However, that's a very preliminary report on how we gather information. I'm eager to bring you up to speed on timelines for reorganization requirements. We do have some end of summer deadlines which will require some meetings with the Administrator and your expertise on how to best conduct this.

Looking forward to it.

Ryan.

From: Henry Darwin [mailto:[Ex. 6 - Personal Privacy](#)]
Sent: Thursday, June 1, 2017 3:52 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>

Subject: Re: Immediate Action Required: Report for Fingerprinting

Hey Ryan. Just checking in. Wanted to let you know that I'm still really excited about joining the team. Is there anything you'd like for me to be working on in advance? Nothing confidential of course, but wanted to let you know that I'm willing.

I hope all is well.

Henry

On Sat, May 20, 2017 at 1:54 PM, Jackson, Ryan <jackson.ryan@epa.gov>

wrote:

Perfect. Let's work toward that.

Much appreciated and looking forward to this.

From: Henry Darwin [mailto:henry.darwin@epa.gov] **Ex. 6 - Personal Privacy**
Sent: Friday, May 19, 2017 5:19 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Munoz, Charles <munoz.charles@epa.gov>
Subject: Re: Immediate Action Required: Report for Fingerprinting

I know you are as anxious as I am to get to work, but I have a lot to wrap up here both professionally and personally. How about July 3?

Thanks

Henry

On Fri, May 19, 2017 at 2:07 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Which raises an important question. When do you think you can start?

Ryan Jackson

Chief of Staff

U.S. EPA

Ex. 6 - Personal Privacy

On May 19, 2017, at 4:47 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Of course. I think this is definitely something we can do when you arrive here. This is a routine thing and something I did after I arrived. Charles, can you help clear this up?

Ryan Jackson

Chief of Staff

U.S. EPA

Ex. 6 - Personal Privacy

On May 19, 2017, at 4:36 PM, Henry Darwin

Ex. 6 - Personal Privacy wrote:

Ryan:

Sorry to bother you with this, but I'm assuming this is something I can take care of when I arrive in D.C. If not, we are going to need to find another arrangement as the closest EPA badge office is over 300 miles from me.

Thanks

Henry

----- Forwarded message -----

From: <personnel_security@epa.gov>

Date: Fri, May 19, 2017 at 11:42 AM

Subject: Immediate Action Required: Report for Fingerprinting

To: Ex. 6 - Personal Privacy

Cc: BELLEROSE.WILLIAM@epa.gov,

MYERS.KEVIN@epa.gov,

LESPERANCE.TWANNA@epa.gov,
GOLDRING.SHARQUITA@epa.gov

Dear HENRY R DARWIN:

Congratulations on your pending appointment to a position at the Environmental Protection Agency (EPA). To keep the appointment process moving ahead, you must **report to an EPA badge office immediately or as soon as possible** to be fingerprinted and enrolled for an EPA badge. Your offer of employment is pending this action. Timeliness is essential because the EPA must receive favorable fingerprint results before you can be assigned a date to begin work. **Any delay in reporting to the badge office will affect your start date and jeopardize your ability to occupy the position.**

Homeland Security Presidential Directive 12 (HSPD-12) requires that all eligible personnel working for or on behalf of the federal government be issued a smart card identification badge, which at the EPA is called an EPA Personnel Access and Security System (EPASS) badge. An EPASS badge has been requested on your behalf.

Before the badge can be created for you, you must go through the federally mandated ID proofing and enrollment process, which takes 10 to 15 minutes. At the badge office, we will:

- **Ask to see two forms of identification.** At least one must be a valid, original, unexpired state or federal government-issued photo ID, such as a driver's license or passport. For acceptable IDs, please refer to the "[Acceptable Identity Source Documents](#)" page.
- Scan and verify your two forms of identification.
- Collect a set of your fingerprints, which will be used to check criminal history records of the Federal Bureau of Investigation (FBI). Please Note: Procedures for obtaining changes, corrections or updates to an FBI identification record are set forth in Title 28, CFR, 16.34.
- Take a photograph.

Remember, you cannot be assigned a start date until you have reported to an EPA badge office to be fingerprinted, and the EPA has received favorable fingerprint results.

The EPA has badge offices nationwide. You can visit any badge office to be fingerprinted. If the badge office recommended in this email is not near you, please find a convenient location on the list of [EPA Badge Office Locations](#). If you need to schedule an appointment, or if you have questions about badge office locations or hours of operation, please call your area badge office at the listed number.

Please visit an EPA badge office. In Washington D.C., go to the **William Jefferson Clinton Federal Building-East** (1201 Constitution Avenue NW, Washington, DC, near 12th Street), room B317 (basement), which is open **Monday through Thursday** from 8 a.m. to 4 p.m. and **Fridays** from 8 a.m. to 1 p.m. Closed Weekends and Federal Holidays. The phone number is [\(202\) 564-2206](#).

For more information, call the person listed below:

- MYERS, KEVIN-[2025641500](#)

Please bring a copy of this email with you.

Sincerely,

The EPA Personnel Security Branch

To: Jackson, Ryan[jackson.ryan@epa.gov]

From: Ex. 6 - Personal Privacy

Sent: Sun 6/4/2017 9:08:27 PM

Subject: CV

Ex. 6 - Personal Privacy pdf

To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Willis, Sharnett[Willis.Sharnett@epa.gov]; Chase Foster[Chase.Foster@walmart.com]
From: Angie Cooper - Global Public Policy
Sent: Wed 6/7/2017 9:53:08 PM
Subject: RE: Intro

Thanks Ryan. Look forward to being in touch.

Sharnett – let me know what time might work best on the afternoon of Wednesday, June 21st or Thursday June 22nd.

Thanks,

Angie

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Wednesday, June 07, 2017 4:11 PM
To: Angie Cooper - Global Public Policy <Angie.Cooper@walmart.com>
Cc: Willis, Sharnett <Willis.Sharnett@epa.gov>
Subject: EXT: Re: Intro

Yes for sure. Sorry for the delay.

Ryan Jackson

Chief of Staff

U.S. EPA

Ex. 6 - Personal Privacy

On Jun 7, 2017, at 4:58 PM, Angie Cooper - Global Public Policy
<Angie.Cooper@walmart.com> wrote:

Hi Ryan –

I wanted to reconnect and see if we might be able to find a time to touch base. Would you be available to meet on the afternoon of Wednesday, June 21st or Thursday June 22nd?

Let me know if either date works or if there is a time that week that might work better.

Thanks,

Angie

Angie Cooper

Senior Director Global Public Policy
Office 479.277.1530 Cell Ex: 6 - Personal Privacy

Angie.Cooper@walmart.com

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: CyberSecurity Executive Order
Sent: Thur 6/1/2017 6:05:46 PM
Subject: [SPAM] Register: Implementing the President's Cybersecurity Exec Order (EO) Training Workshop

**Please Review and Forward to
Your Government Executives, Managers and Staff
Who Play a Part in Agency Cyber Security Management or Implementation**

Potomac Forum Training Workshop

**Implementing the President's
Cybersecurity Executive Order (EO)
Training Workshop**

*A "How To" Workshop to Implement the
Requirements of the EO and its Reporting Requirements*

Date: Wednesday, July 12, 2017

Early Bird Reduced Registration Fee Until June 17th

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(703) 683-1613

info@PotomacForum.org

Location of Workshop:

**Willard InterContinental Hotel
Washington, D.C.**

**Potomac Forum Training Workshops are 100% Educational
and NOT Sales or Marketing Events**

**Workshop for Government & Industry Partners
Press is Not Permitted to Encourage
Candid Discussion in our Learning Environment**

**Keynote:
Dr. Ron Ross
NIST Fellow
Author of the NIST Risk Management Framework (RMF) and
Numerous NIST Cyber Security Publications**

Government Speakers are being approved for participation by their Agencies.

Potomac Forum Workshops are 100% educational programs and not sales or marketing events!

Overview:

This workshop will focus on the President's EO on Cybersecurity and discuss its requirements. A key requirement is the implementation of NIST's Cybersecurity Framework (CSF). We will present an understanding of the CSF and NIST's Risk Management Framework (RMF) which is a key component of the CSF. The CSF and RMF are critical for the federal government in its efforts to mitigate risk within enterprise information systems. The workshop will provide detailed guidance on the integration of the CSF and RMF into a holistic Cybersecurity solution. In addition, the workshop will address the EO reporting requirements for the first 90-day report and the other reports identified in the EO.

Hear from industry experts and government officials tasked with implementing robust cybersecurity and risk management strategies along with learning how NIST's CSF and RMF can be effectively implemented to reduce the risk of cyber-attacks. Listen to a government panel of CIOs and CISOs to understand the challenges they are facing on a day-to-day basis and how implementation of NIST's CSF and RMF helps them identify the risks and what it takes to mitigate those risks. Gaining insights from the panel and peer interactions at the workshop should be invaluable in implementing the President's EO and moving the needle forward in improving federal cybersecurity.

What You Will Learn:

- **The approach used by the NIST RMF**
- **The value of the integration of the NIST RMF with the NIST**

CSF

- **Development of agency Risk Management Strategies**
- **Changes in federal information system authorization requirements and guidelines**
- **Guidance into what agencies can expect from the NIST RMF and new CSF processes**
- **Importance of Risk Assessments (RA), Security Control Assessments (SCA), and Security Testing & Evaluation (ST&E)**
- **Security control categorization and how it is used to manage risk**
- **NIST SP 800-53A, Guide for Assessing the Security Controls in Federal Information Systems and Organizations: Building Effective Security Assessment Plans; NIST SP 800-37 Rev. 1 Guide for Applying the Risk Management Framework to Federal Information Systems: A Security Life Cycle Approach and NIST SP 800-39 Managing Information Security Risk**
- **Reporting Requirements for the Executive Order**
- **Best Practices for Responding to the Executive Order**

Why You Should Attend

- **Review the key steps within the NIST RMF and CSF**
- **Obtain practical knowledge of how NIST RMF and CSF are incorporated into information system security**
- **Gain insight into conducting and implementing NIST RMF and CSF in your organization**
- **Collect information on how NIST frameworks can be leveraged to enhance the security of your organization**
- **Learn how risk management and cybersecurity are essential for regulatory compliance**
- **Learn from risk management, security and OIG colleagues in Federal, State and Local Governments**
- **Learn how other Agencies are responding to the EO**

Who Should Attend:

- **CIOs, CISOs and Staff**
- **IT security and risk management practitioners**
- **IGs and Staff**
- **Program Managers responsible for risk management**
- **Government Employees who want to better understand organization risk management**

- Executives who oversee risk management for the government
- All government executives, managers and staff who need to better understand risk management and implementing the President's Executive Order

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-- How Can You Improve Your Scores?
Tuesday, June 20, 2017

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Executive Order 13781 Training Workshop
What Federal Executives, Managers, and Supervisors Need to Know to
Support the Goals of the Executive Order for Reforming the Federal
Government and Reducing the Federal Civilian Workforce
Wednesday, June 28, 2017

3. Implementing the President's Cybersecurity Executive Order (EO)
Training Workshop
A "How To" Workshop to Implement the Requirements
of the EO and its Reporting Requirements
Wednesday, July 12, 2017

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This email was sent to: jackson.ryan@epa.gov

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This email was sent by: **Potomac Forum, Ltd.**
400 North Washington Street, Alexandria, Virginia, 22314, USA

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Thawley, Cosimo
Sent: Wed 6/14/2017 12:15:38 AM
Subject: RE: [SEC=UNOFFICIAL]

Thanks

-----Original Message-----

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Wednesday, 14 June 2017 10:00 AM
To: Thawley, Cosimo <Cosimo.Thawley@environment.gov.au>
Subject:

I'm sorry I meant to say: Ex. 6 - Personal Privacy is the cell.

Thanks again.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: C Boyden Gray
Sent: Mon 6/12/2017 4:12:22 PM
Subject: Communications Role: Ex. 6 - Personal Privacy Resume
Resume Ex. 6 - Personal Privacy

I am passing along the attached resume of a qualified candidate looking for a communications position.

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Stefano Marguccio
Sent: Mon 6/12/2017 4:03:11 PM
Subject: A pleasure to meet

Dear Jackson,

It was a pleasure to have you and your team in Bologna.

Hoping to reciprocate the visit in D.C. in autumn I send you my warmest regards

Stefano Marguccio

To: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
Cc: Jackson, Ryan[jackson.ryan@epa.gov]; Horton, Melissa H.[MHIGGINS@southernco.com]
From: Black, Noel W.
Sent: Sat 6/3/2017 12:05:52 AM
Subject: Re: Cell

That would be great. I will be away from the phone till around 1:00 on Monday.

How about Melissa and I call you around 2:00 Monday?

Thanks, Noel
Southern Company
Ex. 6 - Personal Privacy

Please excuse any typos...this is coming from my iPhone.

On Jun 2, 2017, at 7:54 PM, Gunasekara, Mandy
<Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov>> wrote:

Hey Noel,

Sorry it's been hard to connect. The date is set for June 19 starting at 1 pm at EPA HQ.

I hate to call now as I hope you've started your weekend. Does it work to connect early on Monday?

Best,
Mandy

Sent from my iPhone

On Jun 1, 2017, at 11:13 AM, Black, Noel W.
<NWBLACK@southernco.com<mailto:NWBLACK@southernco.com>> wrote:

Mandy,

Running down the 19th. Fanning is not available but our COO Kim Greene is available...She has been very involved in the Kemper County Lignite Facility. Do you have a time and place?

Also when you have a moment give me a call...a couple of other questions.

Thanks, Noel Black
Vice President
Federal Regulatory Affairs
Southern Company
202.261.5024 office
Ex. 6 - Personal Privacy mobile

-----Original Message-----

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Wednesday, May 31, 2017 10:37 AM
To: Jackson, Ryan; Black, Noel W.
Subject: RE: Cell

Hey Noel, Following up from our phone call below is the list of confirmed and tentative/invited attendees. I'll update as appropriate. Let me know if you have any follow-up questions.

Confirmed:
Nick Akins, AEP
Gerry Anderson, DTE
Wamer Baxter, Ameren
Pat Vincent-Collawn, PNM
Chris Crane, Exelon
Leo Denault, Entergy
Tom Farrell, Dominion
Ben Fowke, Xcel
Lynn Good, Duke
Sean Trauschke, OGE

Invited:
Southern Co.
NRECA (top 3 to 5)
Basin
TRI-State
APPA (top 3 to 5 from Cory)
TVA
LGE-KU
LPPC
Luminant

-----Original Message-----

From: Jackson, Ryan
Sent: Wednesday, May 31, 2017 6:33 AM
To: Black, Noel W. <NWBLACK@southernco.com<mailto:NWBLACK@southernco.com>>
Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov>>
Subject: Re: Cell

Noel, we wanted to see if your CEO or appropriate representative could join a round table with the Administrator on June 19 at 1pm in EPA for a couple hour stakeholder meeting with the Administrator on next steps after the CPP.

We are happy to talk further on this. Much appreciated.

Ryan,

Ryan Jackson
Chief of Staff
U.S. EPA
Ex. 6 - Personal Privacy

On May 30, 2017, at 10:21 PM, Black, Noel W.
<NWBLACK@southernco.com<mailto:NWBLACK@southernco.com>> wrote:

Mandy,

Just seeing this my apologies.

My cell is: Ex. 6 - Personal Privacy

I'll give you a call in the morning.

Looking forward to talking.

Thanks, Noel
Southern Company
Ex. 6 - Personal Privacy

Please excuse any typos...this is coming from my iPhone.

On May 30, 2017, at 8:09 PM, Gunasekara, Mandy
<Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov><mailto:Gunasekara.Mandy@epa.gov>> wrote:

Hey Noel,

I hope you are well. What's the best number to reach you? We are setting up the CEO utility round table with the Administrator for June 19th at EPA and we'd love Mr. Fanning to attend.

Give me a call when you have a sec; Ex. 6 - Personal Privacy

Best,
Mandy

Sent from my iPhone

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Lynn Scarlett
Sent: Fri 6/9/2017 2:21:48 PM
Subject: Fwd: EPA Releases Green Infrastructure in Parks: A Guide to Collaboration, Funding, and Community Engagement

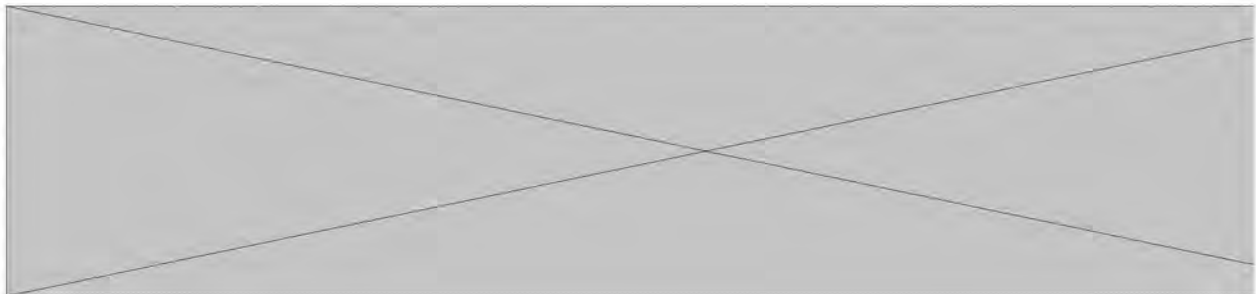
Good report. TNC looks forward to ways to help advance this sort of effort.

Lynn

Sent from my iPhone

Begin forwarded message:

From: "EPA Office of Water" <epaow@public.govdelivery.com>
Date: June 9, 2017 at 9:07:51 AM EDT
To: lscarlett@tnc.org
Subject: EPA Releases Green Infrastructure in Parks: A Guide to Collaboration, Funding, and Community Engagement
Reply-To: epaow@public.govdelivery.com



EPA Releases Green Infrastructure in Parks: A Guide to Collaboration, Funding, and Community Engagement

EPA has produced a guide to encourage partnerships between park agencies and stormwater agencies to promote the use of green infrastructure on park lands. Green infrastructure can help to maximize the environmental, economic, and social benefits of parks. By building strong partnerships, agencies can improve park lands and access to parks, better manage stormwater, increase community resiliency to shifting weather patterns, and provide funding to implement and maintain park enhancements that benefit the community.

The guide is designed to provide a stepwise approach for building relationships with

potential partners, and includes information on how to identify and engage partners, build relationships, involve the community, leverage funding opportunities, and identify green infrastructure opportunities. It includes recommendations on the types of projects that are most likely to attract positive attention and funding, and which provide a wide range of benefits.

Case studies are included to illustrate the approaches presented in the guide. These real-life examples portray how partnerships between municipal stormwater agencies and parks departments have improved recreational resources in the community, enhanced environmental protection, and reduced risks and burdens.

[Learn More.](#)

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1200 Pennsylvania Avenue, N.W. · Washington, DC 20460

To: Jackson, Ryan[jackson.ryan@epa.gov]; Dravis, Samantha[dravis.samantha@epa.gov]
From: Ross Eisenberg
Sent: Wed 6/7/2017 1:24:42 AM
Subject: Ozone

This just went up from NAM on today's announcement:

<http://www.shopfloor.org/2017/06/epa-grants-states-much-needed-flexibility-ozone-standard/>

Cc: Herrgott, Alex H. EOP/CEQ[**Ex. 6 - Personal Privacy**]
To: Jackson, Ryan[jackson.ryan@epa.gov]
From: **Ex. 6 - Personal Privacy**
Sent: Mon 6/5/2017 11:32:44 PM
Subject: Re: Scheduler for Scott Pruitt

Happily! Let me ask around. So great seeing you this weekend ryan!

Lauren Claffey
Ex. 6 - Personal Privacy

On Jun 5, 2017, at 7:24 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Any suggestions are appreciated.

Ryan Jackson
Chief of Staff
U.S. EPA
Ex. 6 - Personal Privacy

On Jun 5, 2017, at 7:14 PM, Herrgott, Alex H. EOP/CEQ <**Ex. 6 - Personal Privacy**>
wrote:

Lauren,

Ryan is looking for someone sharp to replace someone whom is leaving to go back to Oklahoma. You have broad, broad network.

You think you can ping some of your folks and can make some suggestions to our good friend, the COS at EPA.

Alex

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Steven Koonin
Sent: Wed 6/7/2017 8:59:06 PM
Subject: RE: Climate Red-Blue Prospectus

A call anytime Friday June 16 or before noon on Tuesday June 20 would work.

SEK

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Wednesday, June 7, 2017 4:01 PM
To: Steven Koonin <[REDACTED] Ex. 6 - Personal Privacy >
Subject: Re: Climate Red-Blue Prospectus

Yes. So glad you think so. So I was hoping to use him in part to help which is the purpose for the timing. But let's simply do something by phone. I was thinking we could make introductions but so glad that's no necessary. Would there be a good time to simply set up a call? Maybe just June 20?

Ryan Jackson

Chief of Staff

U.S. EPA

[REDACTED] Ex. 6 - Personal Privacy

On Jun 7, 2017, at 2:23 PM, Steven Koonin <[REDACTED] Ex. 6 - Personal Privacy > wrote:

June 20, as I mentioned. It then gets tougher to be there in person. Could manage July 6 or 7 or Aug 1 or Aug 2.

SEK

PS Just got a note from Richard Yamada telling me he's coming over as AA for ORD.
Good choice.

From: Jackson, Ryan [<mailto:jackson.ryan@epa.gov>]
Sent: Wednesday, June 7, 2017 1:16 PM
To: Steven Koonin <[REDACTED] Ex. 6 - Personal Privacy>
Subject: Re: Climate Red-Blue Prospectus

What about after June 12?

Ryan Jackson

Chief of Staff

U.S. EPA

[REDACTED] Ex. 6 - Personal Privacy

On Jun 7, 2017, at 12:20 PM, Steven Koonin <[REDACTED] Ex. 6 - Personal Privacy> wrote:

Possible I'd have some time early afternoon on Friday. I'll know for sure by tomorrow AM. Would that work for you?

Or I could do something before 3 pm on Tuesday, June 20. Of course, a phone call would be much easier, with many more opportunities.

SEK

From: Jackson, Ryan [<mailto:jackson.ryan@epa.gov>]
Sent: Wednesday, June 7, 2017 11:44 AM
To: Steven Koonin <[REDACTED] Ex. 6 - Personal Privacy>
Subject: RE: Climate Red-Blue Prospectus

Steve, are you in DC any time in the near future?

From: Steven Koonin [mailto:steven.koonin@epa.gov] **Ex. 6 - Personal Privacy**
Sent: Monday, May 29, 2017 8:00 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Re: Climate Red-Blue Prospectus

Ryan- Good news.

I can be available on the phone

- anytime today (Monday)
- tomorrow morning before 1000
- pretty much anytime Wednesday after 1000
- many opportunities on days after that

My mobile is **Ex. 6 - Personal Privacy** If you let me know when you might call, I can be sure to be in a place where I can talk.

Steve

Sent from my iPad

On May 28, 2017, at 17:13, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Steve, the Administrator remains very excited about conducting this exercise. He had bounced this and other ideas off others he has worked with for some time and others in the Administration. We would like to proceed further with the red-blue exercise. Although I do not yet have an AA for ORD, I will have a Deputy AA for ORD starting in mid-June. He will have a few initial duties, but helping start this process will be one of them. I would also like staff in ORD to help on this to get the cooperation of both political and career on this project.

We have determined that the best way to process your paperwork is to compensate you as an “administratively determined” position which is unique in the federal hiring process to EPA. There is no vetting other than OPM paperwork which allows us to have you on the payroll in short order.

I would like to discuss with you how go about next steps when convenient. Thanks again for your help with this. We are looking forward to it.

Ryan.

From: Steven Koonin [mailto:steven.koonin@epa.gov] **Ex. 6 - Personal Privacy**
Sent: Wednesday, May 3, 2017 9:57 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Climate Red-Blue Prospectus

Ryan:

Much enjoyed meeting with you and the Administrator last Friday.

As promised, I attach a prospectus for a Climate Science Red-Blue Exercise. As I've watched the media since our meeting, I've become even more convinced that this would be a very good thing to do.

Many of the design choices are deliberate, but perhaps their rationale isn't evident. Would be happy to discuss further – this is only a first draft.

Steve

From: Marathon Petroleum Corporation
Sent: Thur 6/1/2017 3:49:09 PM
Subject: Invitation-Retirement Reception for Patricia Richards
[Invitation.pdf](#)

Greetings!

You are cordially invited to join our Chairman, President and Chief Executive Officer Gary Heminger for a Retirement Celebration Reception honoring Patricia Richards on Wednesday June 21st from 5:30 p.m. – 7:30 p.m. in the Mansfield Room (S-207) of the U.S. Capitol.

The invitation is below and attached.

Please RSVP by replying to this e-mail or [clicking here](#).

We appreciate your consideration.

Best Regards,

Marathon Petroleum Federal Government Affairs Team

Jake Menefee, Mike Birsic, Guy Beeman & Steve Higley



Gary R. Heminger
Chairman, President and Chief Executive Officer
Marathon Petroleum Corporation

Invites You

To a
Retirement Celebration

Honoring
Patricia Richards
Vice President Federal Government Affairs

Welcoming
Jake Menefee
Vice President Federal Government Affairs

Wednesday, June 21, 2017
5:30 p.m. – 7:30 p.m.
United States Capitol
The Mike Mansfield Room (S-207)

The House and Senate Ethics Committees were consulted in the planning
of this event to ensure compliance with all applicable rules

To: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
Cc: Jackson, Ryan[jackson.ryan@epa.gov]
From: Hall, Martin L
Sent: Tue 6/13/2017 10:33:40 PM
Subject: Re: *EXTERNAL* Roundtable June 19

Great! Thank you Mandy.

On Jun 13, 2017, at 6:17 PM, Gunasekara, Mandy <Gunasekara.Mandy@epa.gov> wrote:

The plan is around 2 hours. Ryan and I plan to formalize there agenda tomorrow so will be able to provide clarity soon.

Sent from my iPhone

On Jun 13, 2017, at 3:02 PM, Hall, Martin L <mlhall@firstenergycorp.com> wrote:

Ryan, Mandy

Do you have any idea how long this will run? Trying to schedule some other meetings while Chuck is in town.

Thanks

Marty

On Jun 4, 2017, at 9:53 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Thx.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 4, 2017, at 6:35 PM, Hall, Martin L <mlhall@firstenergycorp.com> wrote:

Ryan,

I confirmed with with Chuck Jones (FE CEO) and he is reworking his schedule so that he can participate.

Thanks,

Marty

On Jun 4, 2017, at 2:19 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

All --

Thank you for your interest, participation, and your help in coordinating your trade association members' participation in the round table with US EPA Administrator Scott Pruitt to discuss a regulatory path forward for the utility sector. Having an open and robust dialogue with the regulated community is a foundational component of setting meaningful and balanced environmental standards. We look forward to learning more about your perspective as the utility sector not only powers our economic growth, but is also at the forefront of developing a more efficient and cleaner energy future.

The roundtable will start at 1 pm on June 19 at the US EPA headquarters in the Green Room in the Administrator's Suite. We will follow up with an official agenda in the coming days. We have received a number of RSVP's and appreciate that. Please confirm your attendance or the attendance of your trade association members by June 12. Should you have any questions, please email or call at

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Sincerely,

Ryan

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

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To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Hale, Michelle[hale.michelle@epa.gov]
From: Junk, Michael
Sent: Wed 6/7/2017 8:46:03 PM
Subject: Re: additional portraits

Let me work on this. We can make it happen.

Sent from my iPhone

On Jun 7, 2017, at 4:35 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Damn it.

Junk, can you help us with Gilcrease?

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 7, 2017, at 4:32 PM, Hale, Michelle <hale.michelle@epa.gov> wrote:

From: Isaacson, Beth [mailto:IsaacsonB@si.edu]
Sent: Wednesday, June 7, 2017 4:30 PM
To: Hale, Michelle <hale.michelle@epa.gov>
Cc: Kelly, Claire <KellyC@si.edu>
Subject: RE: additional portraits

Hi Michelle,

What a busy time! Sorry for the delay but the Chief curator was out as I mentioned, and then in a meeting all day Tuesday.

So, the bottom line is this – we have been bombarded with requests from the new administration for portraits and after discussing with the curators have decided to limit the

number of objects on loan to any "high-ranking government official" to two. We also need to make sure that we have objects available for our own exhibition needs and a long-term loan of four years can be a constraint.

I hope the Administrator enjoys the portraits he has and I am sorry for the bad news.

Beth

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]
Sent: Monday, June 05, 2017 10:32 AM
To: Isaacson, Beth <IsaacsonB@si.edu>
Subject: RE: additional portraits

Hi, Beth, any word?

From: Isaacson, Beth [<mailto:IsaacsonB@si.edu>]
Sent: Friday, May 26, 2017 3:40 PM
To: Hale, Michelle <hale.michelle@epa.gov>
Cc: Grimsley, Molly <GrimsleyM@si.edu>
Subject: RE: additional portraits

Hi Michelle,

We may have a Henry Clay in storage but I do not know the condition of the painting. The chief curator is out until the first week in June so this will have to wait until she returns.

Have a good holiday weekend,

Beth

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]

Sent: Thursday, May 25, 2017 5:21 PM
To: Isaacson, Beth <IsaacsonB@si.edu>
Cc: Grimsley, Molly <GrimsleyM@si.edu>
Subject: Re: additional portraits

How about Henry Clay?

Sent from my iPhone

On May 25, 2017, at 4:54 PM, Isaacson, Beth <IsaacsonB@si.edu> wrote:

Hi Michelle,

I just heard from our chief curator and she is not willing to lend Sir Winston Churchill right now because she is not sure when we might need him again for our exhibition purposes.

Beth

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]
Sent: Thursday, May 25, 2017 4:06 PM
To: Isaacson, Beth <IsaacsonB@si.edu>
Subject: RE: additional portraits

If we get another one – we will hang it on the wall farthest from the windows – I remember we can't hang anything over the fireplace due to the lighting.

From: Isaacson, Beth [<mailto:IsaacsonB@si.edu>]
Sent: Thursday, May 25, 2017 4:02 PM
To: Hale, Michelle <hale.michelle@epa.gov>
Cc: Grimsley, Molly <GrimsleyM@si.edu>
Subject: RE: additional portraits

One Daniel Boone is on display here in the gallery and the other is on a long-term loan already.

We only have the one painting of Winston Churchill so I will have to check on that with the curators and historians and let you know.

Where would you put the painting? If I recall correctly we have issues with too much light in the office...

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]
Sent: Thursday, May 25, 2017 3:50 PM
To: Isaacson, Beth <IsaacsonB@si.edu>
Subject: RE: additional portraits

I see that there are several Daniel Boone and Winston Churchill portraits. Are they available for loan?

From: Isaacson, Beth [<mailto:IsaacsonB@si.edu>]
Sent: Thursday, May 25, 2017 3:47 PM
To: Hale, Michelle <hale.michelle@epa.gov>
Subject: RE: additional portraits

Hi Michelle,

We do not have a limit, per se, but we have had many requests with the change of administration so we are running out of paintings. ☺ That being said, we do not have a selection of portraits in a "lending program" -you would either have to give me names or look up on our website <http://npg.si.edu/portraits> to search for portraits. We do not lend photographs, prints or drawings (actually any work on paper) and we do not lend objects on view here at the gallery.

Let me know what you want to do,

Beth

<image001.png>

Beth Isaacson

Exhibition Assistant

Smithsonian

National Portrait Gallery

IsaacsonB@si.edu | 202.633.8282

Mailing Address

MRC 973

PO Box 37012

Washington, DC 20013-7012

Street Address

750 Ninth Street NW, Suite 410

Washington, DC 20001

<image002.png> <image003.png> <image004.png> <image005.png>

npg.si.edu

From: Hale, Michelle [mailto:hale.michelle@epa.gov]
Sent: Thursday, May 25, 2017 3:25 PM
To: Isaacson, Beth <IsaacsonB@si.edu>
Subject: additional portraits

Beth,

Could you let me know what the limit is on portraits that we can obtain from the National Portrait Gallery? We love the Marshall and Monroe and would like to get some more if possible and if available. Do you have a list of the portraits that are available in your lending program?

Michelle Hale

Executive Assistant to the Administrator

Environmental Protection Agency

1200 Pennsylvania Ave., NW,

WJCS, Suite 3000

Washington, D.C. 20460

(202) 564-1430

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To: Hupp, Millan[hupp.millan@epa.gov]; Khary Cauthen[cauthenk@api.org]; Jackson, Ryan[jackson.ryan@epa.gov]; Hilary Moffett[moffetth@api.org]
Cc: Hupp, Sydney[hupp.sydney@epa.gov]
From: Susan Tackish
Sent: Thur 6/1/2017 3:29:23 PM
Subject: RE: Administrator Pruitt Meeting schedule request

Thanks Millan. I look forward to hearing from Sydney. Best, Susan

Susan A. Tackish

EA to the President & CEO

API | 1220 L Street, NW | Washington, DC 20005

202.682.8502 P | 202.682.8110 F | tackishs@api.org

From: Hupp, Millan [mailto:hupp.millan@epa.gov]
Sent: Thursday, June 01, 2017 11:26 AM
To: Khary Cauthen; Jackson, Ryan; Hilary Moffett
Cc: Susan Tackish; Hupp, Sydney
Subject: RE: Administrator Pruitt Meeting schedule request

Khary,

It is a pleasure to hear from you. I am copying the Administrator's scheduler, Sydney Hupp, on this email as well so that she may work with Susan.

Thank you very much,

Millan

From: Khary Cauthen [mailto:cauthenk@api.org]

Sent: Thursday, June 1, 2017 11:18 AM

To: Jackson, Ryan <jackson.ryan@epa.gov>; Hupp, Millan <hupp.millan@epa.gov>; Hilary Moffett <moffetth@api.org>

Cc: Susan Tackish <tackishs@api.org>

Subject: Administrator Pruitt Meeting schedule request

Ryan/Millan: Good morning, hope that all is well with you. My President and CEO Jack Gerard would like to schedule a meeting with Administrator Pruitt to follow up on several items the Administrator touched on in his remarks to API's Board meeting in March as well as ongoing regulatory activities. Our hope is to schedule this 40 minute meeting at the Administrator's earliest in town availability.

I have copied Susan Tackish, Mr. Gerard's Executive Assistant on this email. She manages his schedule/calendar and can facilitate scheduling the meeting.

Thanks in advance for your assistance.

Khary

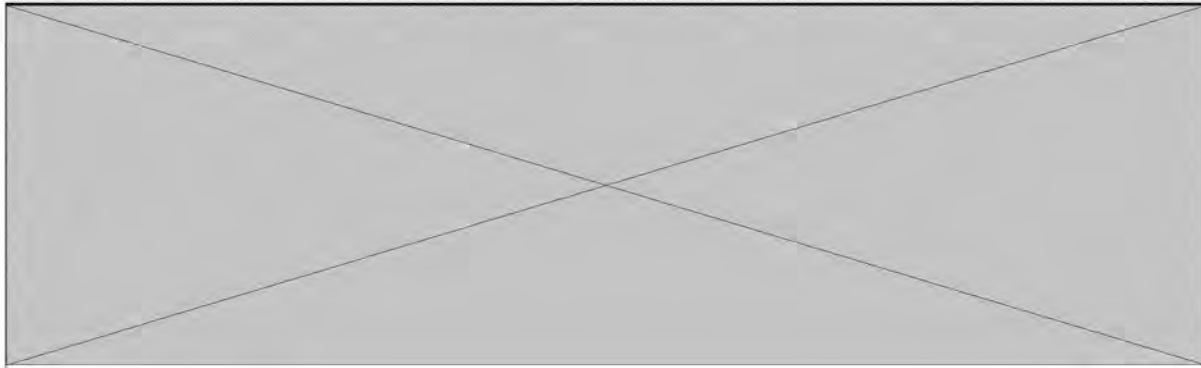
202-682-8209 o

Ex. 6 - Personal Privacy C

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Strategy Execution Insights
Sent: Thur 6/15/2017 4:22:22 PM
Subject: Simplify Your Planning Process | Master 4 Stages to an Execution Culture | Speed is Not a Strategy



June 15, 2017



Strategy Execution Insights brings you all the latest research, trends and news in strategic planning, strategy execution and more, right to your inbox.

LATEST FROM STRATEGY EXECUTION INSIGHTS

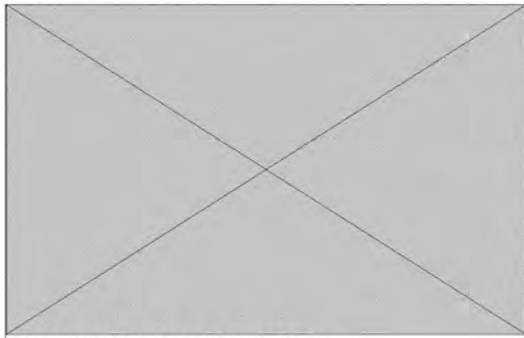
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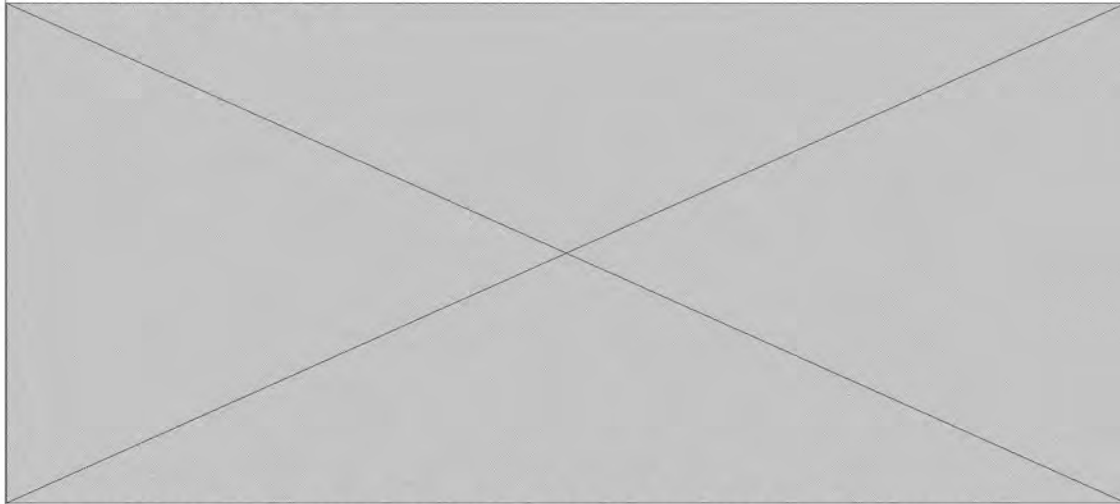


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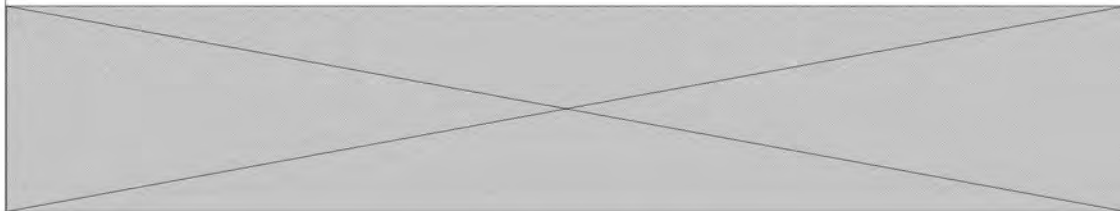


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Understandably, business leaders have become obsessed with moving fast. But the quest for speed can go too far, and many business leaders have become enchanted by the notion that execution... [Read More >>](#)

To Change Your Strategy, First Change How You Think - HBR

It's easy to blame a failed business on doing the wrong things, but rarely do leaders realize that the failure lies in their own thinking. You have to change how you think before... [Read More>>](#)

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87% of businesses strategies fail to achieve their objectives. So what's the secret of the other 13% that deliver year over year? [Read More >>](#)

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- **Guide** - 4 Stages to Creating a Strategy Execution Culture
- **Template** - 4-Level Strategic Plan

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<http://www2.achieveit.com/e/147781/2017-06-15/25dbvg/154641803>

<http://www2.achieveit.com/e/147781/gest-utm-content-Demo20Request/25dbvd/154641803>

To: Jackson, Ryan[jackson.ryan@epa.gov]; Munoz, Charles[munoz.charles@epa.gov]
From: Trey Glenn
Sent: Wed 6/7/2017 8:42:51 PM
Subject: Trip to DC

I hope y'all are well. I am still firming up plans, but will likely be in DC on Tuesday the 20th. Please let me know if there is anything that I need to get with either of you (or anyone else) on while I'm in town.

Thanks,

Trey Glenn

Ex. 6 - Personal Privacy (cell)

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Steven Koonin
Sent: Mon 6/12/2017 1:51:04 PM
Subject: [SPAM] Keeping you in the loop

Ryan

Just to keep you up to date. Last Friday, I, together with Will Happer (Princeton Professor Emeritus, likely Red Team member) and Kathleen Hartnett White (slated to be next CEQ Chair) had a brief meeting Lamar Smith and his staff re the Red/Blue Exercise. Chairman Smith was very supportive and, in a longer meeting with just the staff, they volunteered to organize a letter from multiple Members to the White House urging such an exercise be conducted. Since that latter will involve a broader circulation of a draft prospectus, I will modify the latter just slightly.

Steve

PS Saw Richard Yamada briefly on that visit as well, although he didn't sit in on any of the meetings and he didn't mention (perhaps unaware) his pending involvement in this business.

Sent from my iPad

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: David Schnare
Sent: Wed 6/7/2017 8:20:12 PM
Subject: Fwd: Pebble Mine lobbying
[EPA-4880-000044.pdf](#)
[EPA-4880-000046.pdf](#)

Because he had the attached emails, I could not duck this. I answered the questions as shown below.

I also said the Roberson briefing was before Scott came on board, or thereabouts, that this issue was being forced by a court deadline, that Scott was already aware of the issue when I raised it with him, and that I suggested he get a full briefing so that he could determine what he wanted to do about the matter. I also said that I'd received a short OW briefing while on the Beachhead team and well before Scott was even named to be Administrator, and received a lengthy briefing by OW, also before I met with Scott, and that my role was to identify the issues and ensure all appropriate arguments were assembled for Scott's consideration. And, I told him that Robertson did not tell me anything the Agency didn't already know.

d

----- Forwarded message -----

From: Kevin Bogardus <kbogardus@eenews.net>
Date: Wed, Jun 7, 2017 at 3:34 PM
Subject: Pebble Mine lobbying
To: "Ex. 6 - Personal Privacy" <Ex. 6 - Personal Privacy>

David,

Hi, it's Kevin Bogardus with E&E News.

Myself and a colleague are working on a piece about Pebble Partnership lobbying EPA to reach a legal settlement and allow the permit process for the mining project in Bristol Bay, Alaska to begin. We will be quoting from emails and other records released to the Natural Resources Defense Council under a Freedom of Information Act request (please see attached for some examples). I have a few questions about this, which are:

- Did you give Administrator Pruitt a "specific proposal" from Pebble Partnership, as you requested from Peter Robertson (please see page 2 of EPA 4880 000046)?

No. I never gave Scott anything in writing. (We raised it in the daily brief in a single sentence.)

■• Did you meet in person with Robertson on Feb. 22 (please see page 1 of EPA 4880 000046)?

Yes.

■• On May 12, EPA did decide to reach a legal settlement and allow the permit process for the mining project in Bristol Bay, Alaska to begin. How much influence did Pebble Partnership's lobbying of EPA influence the agency's decision?

I am not aware of the content of the legal settlement, but because Pebble did not provide any information or argument we had not already heard, I don't see how they could influence the agency's decision, especially as they never met with Scott and I left before Scott directed anything and before the settlement was made.

Please get back to me as soon as possible. My deadline is noon EST Thursday, June 8, but the sooner you get back to me, the more it helps my reporting. Thank you for your help.

Kevin Bogardus

E&E News reporter

kbogardus@eenews.net

[202-446-0401](tel:202-446-0401) (p)

Ex. 6 - Personal Privacy (c)

[202-737-5299](tel:202-737-5299) (f)

Follow me [@KevinBogardus](https://twitter.com/KevinBogardus)

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--

David W. Schnare, Esq. Ph.D.

To: Schnare, David[schnare.david@epa.gov]
From: Peter Robertson
Sent: Thur 2/23/2017 6:25:48 PM
Subject: Things you asked for.

David,

Thanks again for taking the time yesterday. If you have questions after speaking with Region 10, I would really appreciate the opportunity to respond to them.

Here are some of the things I promised to forward to you. First, I hope you got my email last night with the partial transcript of Lisa Murkowski's statements about both Pebble and your boss. If you didn't let me know and I'll resend.

I promised a link to the House Science Committee letter. Here is the link to their press release, <https://science.house.gov/news/press-releases/smith-recommends-administrator-pruitt-rescind-pebble-mine-decision>, and here is the link to the letter. <https://science.house.gov/sites/repUBLICANS.science.house.gov/files/documents/02.22.17%20SS>

Here's the link to EPA's web page on Pebble. www.epa.gov/bristolbay It has the links to the Bristol Bay Watershed Assessment and some other docs. Here is the link to the EPA web page with a chronology of all of EPA's 404 vetoes. <https://www.epa.gov/cwa-404/chronology-404c-actions> Number 7 (Henry Rem et al, in Dade County Florida) is the one that the Agency points to as having done a 404 preemptive veto before. Again, a totally inapt comparison.

Here is the 1992 MOU between the Corps and the EPA.
https://www.epa.gov/sites/production/files/2015-06/documents/1992_moa_404q.pdf

You also asked for information about tribes (and other local entities) that support due process for Pebble. Here is a link to a page on our website that lists 29 different tribes, municipal organizations and other entities that are on record favoring due process for Pebble. <https://corporate.pebblepartnership.com/about> Many of these expressions are 7 or 8 years old, but they still represent the views of those entities.

We are going to try to get a letter from the delegation; I will also have later in the day some other documents related to the State's expressions of support for due process.

As always, let me know if you have any questions.

Peter

Pebble Partnership: About Pebble

I wanted to get

www.epa.gov

Chronology of 404(c) Actions | Section 404 of the Clean

...

Smith Recommends Administrator Pruitt Rescind
Pebble Mine Decision

To: Schnare, David[schnare.david@epa.gov]
From: Peter Robertson
Sent: Thur 2/16/2017 8:15:46 PM
Subject: Re: Pebble

See you then. Thanks.

Peter

From: Schnare, David <schnare.david@epa.gov>
Sent: Thursday, February 16, 2017 2:35:16 PM
To: Peter Robertson
Subject: RE: Pebble

Wed, the 22nd, 5pm.

d.

From: Peter Robertson [mailto:peterrobertson@pebblepartnership.com]
Sent: Thursday, February 16, 2017 2:19 PM
To: Schnare, David <schnare.david@epa.gov>
Subject: Re: Pebble

David,

How about Wednesday afternoon at 5:00 or as late as you want. If Wednesday doesn't work, I could also do Friday afternoon, anytime you want.

Thanks.

Peter

From: Schnare, David <schnare.david@epa.gov>
Sent: Thursday, February 16, 2017 7:50:44 AM
To: Peter Robertson
Subject: RE: Pebble

Peter:

My calendar for next week is relatively open, although with the new Administrator coming in, and a heavy briefing schedule for him in the wings, it could get messy rather quickly. Late afternoon is often the best time (after 5). Let me know what day you want and I'll hold that time.

I am aware of the problem in general but do not have specifics. Can you bring with you a timeline of events and a status on the legal actions? The preemptive strike by the last administration was indeed unprecedented and I don't want to see it become a precedent, particularly because it is a violation of Pebble's due process rights.

In any case, I need to get this set up for the Administrator, which means I need the full background and a specific proposal on what we can and should do. Without meaning to be flip, that's your homework assignment.

Best,

David Schnare

From: Peter Robertson [<mailto:peterrobertson@pebblepartnership.com>]
Sent: Wednesday, February 15, 2017 4:37 PM
To: Schnare, David <schnare.david@epa.gov>
Subject: Pebble

David,

Thanks for chatting with me briefly. I'm the Senior Vice President for Corporate Affairs for the Pebble Partnership. As you may know, Pebble is trying to develop a world-class copper mine in southwestern Alaska. We have yet to submit the first of the permit applications necessary to move ahead with the mine -- the permit application under section 404 of the Clean Water Act.

EPA, through Region 10, has moved to block our efforts to develop the mine by putting forward a preemptive veto of the mine -- before we submit our permit application -- under Clean Water Act section 404(c). This action is unprecedented and fundamentally unfair. There is no environmental harm that comes from allowing us to submit our permit application, because the Corps of Engineers (which reviews these permit applications) may say no, and even if the Corps says yes, the Agency retains the ability to veto the permit. We are only looking for the same due process that 60,000 other permit applicants get each year.

There is a significantly long history of this matter (including our ongoing litigation against the Agency), and I would appreciate the opportunity to discuss it with you and seek your guidance and assistance on our efforts to work through these issues with the Agency.

Do you have time for me to meet with you in the near future?

Sincerely,

Peter Robertson

Peter D. Robertson

Senior Vice President for Corporate Affairs

The Pebble Partnership

1330 Connecticut Avenue, NW
Washington, DC 20036

Office: 202-629-3392

Cell: Ex. 6 - Personal Privacy

To: Jackson, Ryan[jackson.ryan@epa.gov]; Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
Cc: Hupp, Sydney[hupp.sydney@epa.gov]
From: Chiang, Amy
Sent: Wed 6/7/2017 8:16:56 PM
Subject: RE: Meeting with Administrator Pruitt June 28th
[Pruitt meeting request 6-7-17.pdf](#)

All--Including a formal request letter here as well if it's helpful. Please let me know if you need more information.

Best,

Amy

From: Chiang, Amy
Sent: Friday, June 02, 2017 1:41 PM
To: 'jackson.ryan@epa.gov'; 'Gunasekara.Mandy@epa.gov'
Cc: 'hupp.sydney@epa.gov'
Subject: Meeting with Administrator Pruitt June 28th

Ryan and Mandy,

Hope all is well. I'm sure things are busy over there given yesterday's announcement.

We were hoping Administrator Pruitt might have some time to meet Honeywell's Performance Materials and Technologies CEO, Rajeev Gautam, and Honeywell's General Counsel, Kate Adams, on June 28th? We are eager to give him an overview on our business and specifically talk about the Significant New Alternatives Policy (SNAP) program and SNAP rules, Montreal Protocol and greenhouse gas emissions and fuel economy standards for light-duty vehicles.

Please let me know if timing works and if you need anything more from my end.

Best,

Amy

Honeywell (www.honeywell.com) is a Fortune 100 diversified technology and manufacturing leader, serving customers worldwide with aerospace products and services; control technologies for buildings, homes, and industry; turbochargers; and performance materials. For more news and information on Honeywell, please visit www.honeywell.com/newsroom.

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Amy Chiang
Vice President
Head of Energy & Environment
Global Government Relations

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Washington, DC 20001

202.662.2638
amy.chiang@honeywell.com
www.honeywell.com

June 7, 2017

The Honorable Scott Pruitt
Administrator
United States Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, D.C. 20460

Dear Administrator Pruitt:

On behalf of Honeywell, headquartered in Morris Plains, NJ, I would like to request a meeting for our leadership to meet with you to discuss issues that are critical to our Fluorine Products business that develops new environmentally preferable hydrofluoro-olefins (HFO) refrigerants, foam blowing agents, propellants, and solvents.

Honeywell is a recognized leading innovator in the development and commercialization of HFOs. This business is a multi-billion dollar industry in which the United States has a clear first-mover advantage and EPA's Significant New Alternatives Policy (SNAP) office is essential for continued economic development in this growth sector. U.S. companies are investing over \$1 billion in the development and manufacture of HFOs to meet global demand for next-generation alternatives to hydrofluorocarbons (HFCs), but foreign competitors are looking to take ground from the United States in this industry. At stake are thousands of U.S.-based jobs supporting local economies, including our manufacturing plants in Louisiana and an R&D site in New York. Continued funding of these programs will keep industry at a competitive advantage and reduce the business uncertainty which hinders investments and job creation.

We strongly support EPA SNAP Rules 20 and 21 (Protection of Stratospheric Ozone: Change of Listing Status for Certain Substitutes under the Significant New Alternatives Policy Program; and Protection of Stratospheric Ozone: Significant New Alternatives Policy Program New and Changed Listings). These rules are critical to the successful transition, already underway, and now guided by the Kigali Amendment to the Montreal Protocol (Kigali Amendment), from hydrofluorocarbons (HFCs) to HFOs in refrigeration, air-conditioning, foam blowing, solvent, and aerosol applications. This transition is driving economic growth and job creation at home and supporting U.S. companies' ability to benefit from exporting innovative products. In addition to the SNAP rules, the EPA Greenhouse Gas Emissions Standards are essential for implementing the transition from HFCs to HFOs via the motor vehicle air conditioning refrigerant credit incentive.



We would appreciate the opportunity for Rajeev Gautam, President and CEO of Honeywell Performance Materials and Technologies; Kate Adams, Senior VP and General Counsel, Jim Carroll, Senior VP, Global Government Relations and myself to meet with you in your offices in Washington, D.C. on the morning of June 28.

We look forward to providing you with information about Honeywell and the critical role that EPA plays in our business.

Sincerely,

Amy Chiang

Vice President, Government Relations

To: Myron Ebell[Myron.Ebell@cei.org]
From: Myron Ebell
Sent: Thur 6/1/2017 2:36:11 PM
Subject: Cooler Heads Coalition action alert on Paris Climate Treaty

President Trump is scheduled to announce his decision to cancel the Paris Climate Treaty at 3 PM today. I don't have any idea which route to withdrawal he will take.

The environmental pressure groups, the international establishment, many corporate CEOs, the Democrats, and the Swamp in general are going to attack him in the media with everything they've got. I hope that everyone who can will support and praise the pullout in every public media channel you use. Note that the President's Twitter handle is @realDonaldTrump.

Myron Ebell

Director, Center for Energy and Environment

Competitive Enterprise Institute

1310 L Street, N. W., Seventh Floor

Washington, DC 20005, USA

Tel direct: (202) 331-2256

Tel mobile: Ex. 6 - Personal Privacy

E-mail: Myron.Ebell@cei.org

Stop continental drift!

To: Davis, Gail[Davis.Gail@epa.gov]; EPA@BCDTRAVEL.COM[EPA@BCDTRAVEL.COM];
Jackson, Ryan[jackson.ryan@epa.gov]; Willis, Sharnett[Willis.Sharnett@epa.gov]
From: EPA@BCDTRAVEL.COM
Sent: Mon 6/5/2017 10:01:23 PM
Subject: UPDATED 05Jun - Travel Receipt for JACKSON/RYAN T Travel date 07Jun
Travel Receipt Communication Attachment - June 7 2017.PDF

TRAVELER NOTICE - Many airlines charge fees for baggage and other services. Amounts vary by airline and are subject to change.

Travelers are responsible for verifying all fees charged by individual carriers.

Please visit the operating carrier website of your ticketed itinerary for applicable fees.

To view your trip via Viewtrip, please click [here](#)

Printer Friendly

Total Amount: 214.94 USD

This ticket information applies to the following trip(s):

Delta Air Lines Flight [Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F] on June 07 (**Operated By: Endeavor Air Db a Delta Connection**)

Delta Air Lines Flight [Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F] to Rome on June 07

Delta Air Lines Flight [Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F] from Rome to [Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F] on June 13 (**Operated By: Alitalia S.P.A**)

Delta Air Lines Flight [Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F] DC on June 13 (**Operated By: Endeavor Air Db a Delta Connection**)

ElectronicTicket Number [Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F]

Invoice Number: 000168562

Ticket Amount: 1,842.76 USD

Prior Ticket: [Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F]

Old Ticket Value: 1,681.06 USD

Penalty/Exchange Fee: 0.00 USD

Add/Collect: 161.70 USD

Form of Payment: CA*****5946

Service Fee Number: 8900693781289
Service Fee Amount: 53.24 USD
Form of Payment: CA*****5946

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/20		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	
06/07/20		FCO	Confirmed		
06/13/201	FCO	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed		
06/13/201		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed		

[Add to Calendar](#) [Need Help?](#)

Delta Air Lines Flight Economy

[Online check-in](#)

Depart:

[Weather](#)

Arrive:

[Weather](#)

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Duration: 1 hour(s) and 17 minute(s) Non-stop
Status: Confirmed - Delta Air Lines Record Locator
Equipment: Canadair Regional Jet 900
*Operated By: Endeavor Air DBA Delta Connection
Seat: Assigned at Check-in
Distance: 212 miles / 341.108 kilometers
CO2 Emissions: 116.6 lbs/53 kgs

Remarks: FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE

CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY
PLEASE CHECK WWW.DELTA.COM
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

Delta Air Lines Flight Economy

[Online check-in](#)

Depart:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

[Weather](#)

Arrive:

Fiumicino, Terminal 3
Rome, Italy

[Weather](#)

Thursday, June 8 2017

Duration:

8 hour(s) and 45 minute(s) Non-stop

Total duration:

13 hour(s) and 40 minute(s) including layover(s)

Status:

Confirmed - Delta Air Lines Record Locator

Meal:

Dinner

Equipment:

Airbus Industrie A330-300

Seat:

38B (Non smoking) Confirmed

Distance:

4263 miles / 6859.167 kilometers

CO2 Emissions:

1,594.36 lbs/724.71 kgs

Remarks:

SEAT ASSIGNMENT CONFIRMED:38B

NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

[Add to Calendar](#) [Need Help?](#)

Delta Air Lines Flight Economy

[Online check-in](#)

Depart:

Fiumicino, Terminal 1
Rome, Italy

[Weather](#)

Arrive:

Wednesday, June 13 2017

[Weather](#)

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Duration:

9 hour(s) and 35 minute(s) Non-stop

Status:

Confirmed - Delta Air Lines Record Locator

Meal:

Lunch

Equipment:

Boeing 777-200/ 200ER

*Operated By:

Alitalia

Seat:

Assigned at Check-in

Distance:

4263 miles / 6859.167 kilometers

CO2 Emissions:

1,594.36 lbs/724.71 kgs

Remarks:

NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

Delta Air Lines Flight Economy

[Online check-in](#)

Depart:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

[Weather](#)

Arrive:

[Weather](#)

Washington, District of Columbia, United States

Duration: 08:17 PM Tuesday, June 13 2017
Total duration: 1 hour(s) and 47 minute(s) Non-stop
Status: 15 hour(s) and 37 minute(s) including layover(s)
Equipment: Confirmed - Delta Air Lines Record Locator: [REDACTED]
*Operated By: Canadair Regional Jet
Seat: Endeavor Air DBA Delta Connection
Distance: 03C (Non smoking) Confirmed
CO2 Emissions: 227 miles / 365.243 kilometers
Remarks: 124.85 lbs/56.75 kgs
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

FOR 24/7 TRAVEL ASSISTANCE PLEASE CONTACT
THE BCD TRAVEL TEAM AT 1-866-964-1346
FOR OUTSIDE THE US CALL COLLECT 770-829-2609
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NUMBER OF 1-866-964-1346 TO ACCESS TRAVEL
DUE TO RECENT CHANGES IN THE FY15 GOVERNMENT CITY PAIR
PROGRAM/PPP YOUR AIR RESERVATIONS ARE SUBJECT TO
CANCELLATION BY THE AIRLINES IF NOT TICKETED AT LEAST
48 HOURS PRIOR TO SCHEDULED DEPARTURE
PLEASE ENSURE ALL NECESSARY APPROVALS ARE PROCESSED IN
ACCORDANCE WITH YOUR AGENCY'S BUSINESS RULES BUT NO LESS
THAN 3 BUSINESS DAYS PRIOR TO DEPARTURE TO ENSURE TICKETING.
THIS 48 HOUR CANCELLATION RULE DOES NOT APPLY TO
INTERNATIONAL RESERVATIONS UNLESS YOUR TRIP HAS DOMESTIC
CONNECTIONS ON MORE THAN ONE AIRLINE OR THESE
RESERVATIONS REQUIRE SEPARATE AIR TICKETS.

RECONFIRM INTERNATIONAL FLIGHTS 72HRS PRIOR TO TRAVEL
CHECK IN 2 1/2 HOURS PRIOR FOR INTERNATIONAL TRAVEL
A PASSPORT VALID 6 MONTHS BEYOND INTENDED STAY
IS REQUIRED FOR THIS ITINERARY
ADVISED OF DOCUMENT REQUIREMENTS FOR THIS ITINERARY
CHECK WWW.CDC.GOV/TRAVEL FOR TRAVEL HEALTH ADVISORIES
PROPER DOCUMENTATION IS REQUIRED FOR ENTRY INTO
ARRIVAL COUNTRY
CHECK WWW.DHS.GOV/TRAVEL-ALERTS
FOR COUNTRY TRAVEL ADVISORIES
CONTACT THE DESIGNATED GOVERNMENT AGENCY IN YOUR
COUNTRY OF CITIZENSHIP FOR PASSPORT/VISA REQUIREMENTS.
TRAVEL INTO U.S. MAY REQUIRE ESTA AUTHORIZATION.
VISIT [HTTPS://ESTA.CBP.DHS.GOV](https://esta.cbp.dhs.gov) FOR DETAILS.
CHECK-IN TIMES ARE 90 MINUTES PRIOR TO DEPARTURE
FOR DOMESTIC FLIGHTS OR 120 MINUTES FOR INTERNATIONAL
ELECTRONIC TICKET/S/ WILL BE ISSUED FOR THIS TRIP
AIRPORT FEES MAY BE COLLECTED UPON ARRIVAL
OR DEPARTURE.
CHECKED BAGGAGE POLICIES VARY BASED ON CARRIER AND FINAL
WITH YOUR TRAVEL CONSULTANT OR THE AIRLINES WEBSITE.

**
**

DESTINATION. FOR THE LATEST INFORMATION PLEASE CHECK

05Jun/05:01PM

TRAVELER NOTICE – Please check with your carrier(s) for travel documents required (Passport, VISA, etc.) and security requirements regarding permitted and prohibited articles and goods related to your travel.

Air	Car	Hotel	Rail	Other
1,842.76 USD				
Vendor	Fare information	Refund restrictions before departure	Change restrictions after ticketing	Ticket information
Air <div> <div></div> <div>07Jun</div> <div>7Jun</div> <div>13Jun</div> <div>13Jun</div> </div>	Total: USD 1,842.76	REFUND RESTRICTIONS MAY APPLY	CHANGE RESTRICTIONS MAY APPLY	
All quotes are provider quotes excluding possible taxes and charges en route. Currency conversions shown in this itinerary receipt are done using the bank rate applicable at the date shown in the header of this document. Please note that some local taxes and charges may be invoiced during your trip and cannot be shown at time of reservation.				

Advice to Passengers

Transportation of Hazardous Materials

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Forbidden Dangerous Items Examples:

Paints, lighter fluid, fireworks, tear gases, oxygen bottles and radiopharmaceuticals. There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person. For further information, contact your airline representative.

Note: Spare batteries and fuel cells are not permitted in checked or hold baggage. These items MUST be packed in carry-on baggage. If your carry-on bag is gate checked, the spare batteries and fuel cells must be removed and carried in the cabin.

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TRAVELER NOTICE - Many airlines charge fees for baggage and other services. Amounts vary by airline and are subject to change.

Travelers are responsible for verifying all fees charged by individual carriers.

Please visit the operating carrier website of your ticketed itinerary for applicable fees.

To view your trip via Viewtrip, please click [here](#)

Printer Friendly

Ticket Receipt

Total Amount: 214.94 USD

This ticket information applies to the following trip(s):

Delta Air Lines Flight **Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F** on June 07 (Operated By: Endeavor Air Dba Delta Connection)
Delta Air Lines Flight **Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F** to Rome on June 07
Delta Air Lines Flight **Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F** from Rome to **Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F** on June 10 (Operated By: Alitalia S.P.A)
Delta Air Lines Flight **Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F** on June 10 (Operated By: Endeavor Air Dba Delta Connection)

Electronic Ticket Number: **Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F**

Invoice Number: 000168562

Ticket Amount: 1,842.76 USD

Prior Ticket: **Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F**

Old Ticket Value: 1,681.06 USD

Penalty/Exchange Fee: 0.00 USD

Add/Collect: 161.70 USD

Form of Payment: CA*****5946

Service Fee Number: 8900693781289

Service Fee Amount: 53.24 USD

Form of Payment: CA*****5946

Travel Summary – Agency Record Locator M2PZWQ

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/2017	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		Confirmed		Economy / Y
06/07/2017	FCO		Confirmed		Economy / X
06/13/2017	FCO	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Economy / K
06/13/2017	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		Confirmed		Economy / K

AIR - Wednesday, June 7 2017 - Agency Record Locator M2PZWQ
[Add to Calendar](#) [Need Help?](#)

Delta Air Lines Flight:	Economy	Online check-in
Depart:		
Arrive:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	
Duration:	1 hour(s) and 17 minute(s) Non-stop	
Status:	Confirmed - Delta Air Lines Record Locator: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	
Equipment:	Canadair Regional Jet 900	
*Operated By:	Endeavor Air DbA Delta Connection	
Seat:	Assigned at Check-in	
Distance:	212 miles / 341.108 kilometers	
CO2 Emissions:	116.6 lbs/53 kgs	
Remarks:	FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY. PLEASE CHECK WWW.DELTA.COM NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED	

AIR - Wednesday, June 7 2017 - Agency Record Locator M2PZWQ

Delta Air Lines Flight:	Economy	Online check-in
Depart:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	
Arrive:	Fiumicino, Terminal 3 Rome, Italy Thursday, June 8 2017	
Duration:	8 hour(s) and 45 minute(s) Non-stop	
Total duration:	13 hour(s) and 40 minute(s) including layover(s)	
Status:	Confirmed - Delta Air Lines Record Locator: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	
Meal:	Dinner	
Equipment:	Airbus Industrie A330-300	
Seat:	38B (Non smoking) Confirmed	
Distance:	4263 miles / 6859.167 kilometers	
CO2 Emissions:	1,594.36 lbs/724.71 kgs	
Remarks:	SEAT ASSIGNMENT CONFIRMED: 38B NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED	

AIR - Tuesday, June 13 2017 - Agency Record Locator M2PZWQ
[Add to Calendar](#) [Need Help?](#)

Delta Air Lines Flight:	Economy	Online check-in
Depart:	Fiumicino, Terminal 1 Rome, Italy Tuesday, June 13 2017	
Arrive:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	
Duration:	9 hour(s) and 35 minute(s) Non-stop	
Status:	Confirmed - Delta Air Lines Record Locator: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	
Meal:	Lunch	
Equipment:	Boeing 777-200/ 200ER	
*Operated By:	Alitalia	
Seat:	Assigned at Check-in	
Distance:	4263 miles / 6859.167 kilometers	
CO2 Emissions:	1,594.36 lbs/724.71 kgs	
Remarks:	NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED	

AIR - Tuesday, June 13 2017 - Agency Record Locator M2PZWQ

Delta Air Lines Flight:	Economy	Online check-in
Depart:		
Arrive:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	
Duration:	1 hour(s) and 47 minute(s) Non-stop	
Total duration:	15 hour(s) and 37 minute(s) including layover(s)	
Status:	Confirmed - Delta Air Lines Record Locator <small>Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F</small>	
Equipment:	Canadair Regional Jet	
*Operated By:	Endeavor Air DBA Delta Connection	
Seat:	03C (Non smoking) Confirmed	
Distance:	227 miles / 365.243 kilometers	
CO2 Emissions:	124.85 lbs/56.75 kgs	
Remarks:	NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED	

Remarks

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THE BCD TRAVEL TEAM AT 1-866-964-1346
FOR OUTSIDE THE US CALL COLLECT 770-829-2609
FOR THE HEARING IMPAIRED PLEASE DIAL 711
TO ACCESS RELAY SERVICE PROVIDE PHONE
NUMBER OF 1-866-964-1346 TO ACCESS TRAVEL
DUE TO RECENT CHANGES IN THE FY15 GOVERNMENT CITYPAIR
PROGRAM/CPY YOUR AIR RESERVATIONS ARE SUBJECT TO
CANCELLATION BY THE AIRLINE IF NOT TICKETED AT LEAST
48 HOURS PRIOR TO SCHEDULED DEPARTURE
PLEASE ENSURE ALL NECESSARY APPROVALS ARE PROCESSED IN
ACCORDANCE WITH YOUR AGENCY'S BUSINESS RULES BUT NO LESS
THAN 3 BUSINESS DAYS PRIOR TO DEPARTURE TO ENSURE TICKETING.
THIS 48 HOUR CANCELLATION RULE DOES NOT APPLY TO
INTERNATIONAL RESERVATIONS UNLESS YOUR TRIP HAS DOMESTIC
CONNECTIONS IN MORE THAN ONE AIRLINE OR THESE
RESERVATIONS REQUIRE SEPARATE AIR TICKETS.

RECONFIRM INTERNATIONAL FLIGHTS 72 HRS PRIOR TO TRAVEL
CHECK IN 2 1/2 HOURS PRIOR FOR INTERNATIONAL TRAVEL
A PASSPORT VALID 6 MONTHS BEYOND INTENDED STAY
IS REQUIRED FOR THIS ITINERARY
ADVISED OF DOCUMENT REQUIREMENTS FOR THIS ITINERARY
CHECK WWW.CDC.GOV/TRAVEL FOR TRAVEL HEALTH ADVISORIES
PROPER DOCUMENTATION IS REQUIRED FOR ENTRY INTO
ARRIVAL COUNTRY
CHECK WWW.DHS.GOV/TRAVEL-ALERTS
FOR COUNTRY TRAVEL ADVISORIES
CONTACT THE DESIGNATED GOVERNMENT AGENCY IN YOUR
COUNTRY OF CITIZENSHIP FOR PASSPORT/VISA REQUIREMENTS.
TRAVEL INTO U.S. MAY REQUIRE ESTA AUTHORIZATION.
VISIT [HTTPS://ESTA.CBP.DHS.GOV](https://esta.cbp.dhs.gov) FOR DETAILS.
CHECK-IN TIMES ARE 90 MINUTES PRIOR TO DEPARTURE
FOR DOMESTIC FLIGHTS OR 120 MINUTES FOR INTERNATIONAL
ELECTRONIC TICKET/S WILL BE ISSUED FOR THIS TRIP
AIRPORT FEES MAY BE COLLECTED UPON ARRIVAL
OR DEPARTURE.
CHECKED BAGGAGE POLICIES VARY BASED ON CARRIER AND FINAL
WITH YOUR TRAVEL CONSULTANT OR THE AIRLINE'S WEBSITE.

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DESTINATION FOR THE LATEST INFORMATION PLEASE CHECK

05Jun/05:01PM

TRAVELER NOTICE – Please check with your carrier(s) for travel documents required (Passport, VISA, etc.) and security requirements regarding permitted and prohibited articles and goods related to your travel.

Estimated trip total				1,842.76 USD
Air	Car	Hotel	Rail	Other
1,842.76 USD				
Fare details: Ticketed				
Vendor	Fare information	Refund restrictions before departure	Change restrictions after ticketing	Ticket information
Air 07Jun 7Jun 13Jun 13Jun	Total: USD 1,842.76	REFUNDRESTRICTIONS MAY APPLY	CHANGERESTRICTIONS MAY APPLY	
All quotes are provider quotes excluding possible taxes and charges en route. Currency conversions shown in this itinerary receipt are done using the bank rate applicable at the date shown in the header of this document. Please note that some local taxes and charges may be invoiced during your trip and cannot be shown at time of reservation.				

Advice to Passengers

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Note: Spare batteries and fuel cells are not permitted in checked or hold baggage. These items MUST be packed in carry-on baggage. If your carry-on bag is gate checked, the spare batteries and fuel cells must be removed and carried in the cabin.

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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Ado Machida
Sent: Thur 6/1/2017 2:30:50 PM
Subject: Automatic reply:

I will be out of the country from May 31 - June 14. Please bear with me as the time difference will not allow me to respond immediately. If you need immediate assistance, please call our office at (202) 315-5100. Thank you.

To: Davis, Gail[Davis.Gail@epa.gov]; EPA@BCDTRAVEL.COM[EPA@BCDTRAVEL.COM]; Jackson, Ryan[jackson.ryan@epa.gov]; Willis, Sharnett[Willis.Sharnett@epa.gov]
From: EPA@BCDTRAVEL.COM
Sent: Mon 6/5/2017 9:55:13 PM
Subject: Travel Itinerary for JACKSON / RYAN T

TRAVELER NOTICE - Many airlines charge fees for baggage and other services. Amounts vary by airline and are subject to change.

Travelers are responsible for verifying all fees charged by individual carriers.

Please visit the operating carrier website of your ticketed itinerary for applicable fees.

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/2017		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed		Economy / Y
06/07/2017		FCO	Confirmed		Economy / X
06/13/2017	FCO	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed		Economy / K
06/13/2017		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed		Economy / K

Delta Air Lines Flight Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Economy

Depart:

[Weather](#)

Arrive:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

[Weather](#)

Duration: 1 hour(s) and 17 minute(s) Non-stop

Status: Confirmed - Delta Air Lines Record Locator

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Equipment: Canadair Regional Jet 900

*Operated By: Endeavor Air Db a Delta Connection

Seat: Assigned at Check-in

Distance: 212 miles / 341.108 kilometers

CO2 Emissions: 116.6 lbs/53 kgs

Delta Air Lines Flight Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Economy

Depart:

[Weather](#)

Arrive:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Fiumicino, Terminal 3
Rome, Italy

[Weather](#)

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Thursday, June 8 2017

Duration: 8 hour(s) and 45 minute(s) Non-stop

Total duration: **13 hour(s) and 40 minute(s) including layover(s)**

Status: Confirmed - Delta Air Lines Record Locator

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Meal: Dinner

Equipment: Airbus Industrie A330-300

Seat: 38B (Non smoking) Confirmed

Distance: 4263 miles / 6859.167 kilometers

CO2 Emissions: 1,594.36 lbs/724.71 kgs

Remarks: SEAT ASSIGNMENT CONFIRMED:38B
FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY.
PLEASE CHECK WWW.DELTA.COM
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

Delta Air Lines Flight Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Economy

Depart: Fiumicino, Terminal 1
Rome, Italy

[Weather](#)

Arrive: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Tuesday, June 13 2017

[Weather](#)

Duration: 9 hour(s) and 35 minute(s) Non-stop

Status: Confirmed - Delta Air Lines Record Locator: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Meal: Lunch

Equipment: Boeing 777-200/ 200ER

*Operated By: Alitalia

Seat: Assigned at Check-in

Distance: 4263 miles / 6859.167 kilometers

CO2 Emissions: 1,594.36 lbs/724.71 kgs

Remarks: NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

Delta Air Lines Flight Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Economy

Depart:

[Weather](#)

Arrive:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

[Weather](#)

Duration:
Total duration: **15 hour(s) and 37 minute(s) including layover(s)**
Status: Confirmed - Delta Air Lines Record Locator: Personal Security Ex. B: Ex. FD: Ex. TE: Ex. IF
Equipment: Canadair Regional Jet
*Operated By: Endeavor Air Dba Delta Connection
Seat: 03C (Non smoking) Confirmed
Distance: 227 miles / 365.243 kilometers
CO2 Emissions: 124.85 lbs/56.75 kgs
Remarks: NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

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OR DEPARTURE.

CHECKED BAGGAGE POLICIES VARY BASED ON CARRIER AND FINAL
WITH YOUR TRAVEL CONSULTANT OR THE AIRLINES WEBSITE.

**

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DESTINATION. FOR THE LATEST INFORMATION PLEASE CHECK

05Jun/04:55PM

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(Passport, VISA, etc.) and security requirements regarding permitted and prohibited articles and
goods related to your travel.

Air	Car	Hotel	Rail	Other
1,842.76 USD				
Vendor	Fare information	Refund restrictions before departure	Change restrictions after ticketing	Ticket information
Air <div> <div>07Jun</div> <div>7Jun</div> <div>13Jun</div> <div>13Jun</div> </div>	Total: USD 1,842.76	REFUND RESTRICTIONS MAY APPLY	CHANGE RESTRICTIONS MAY APPLY	
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Forbidden Dangerous Items Examples:

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Note: Spare batteries and fuel cells are not permitted in checked or hold baggage. These items **MUST** be packed in carry-on baggage. If your carry-on bag is gate checked, the spare batteries and fuel cells must be removed and carried in the cabin.

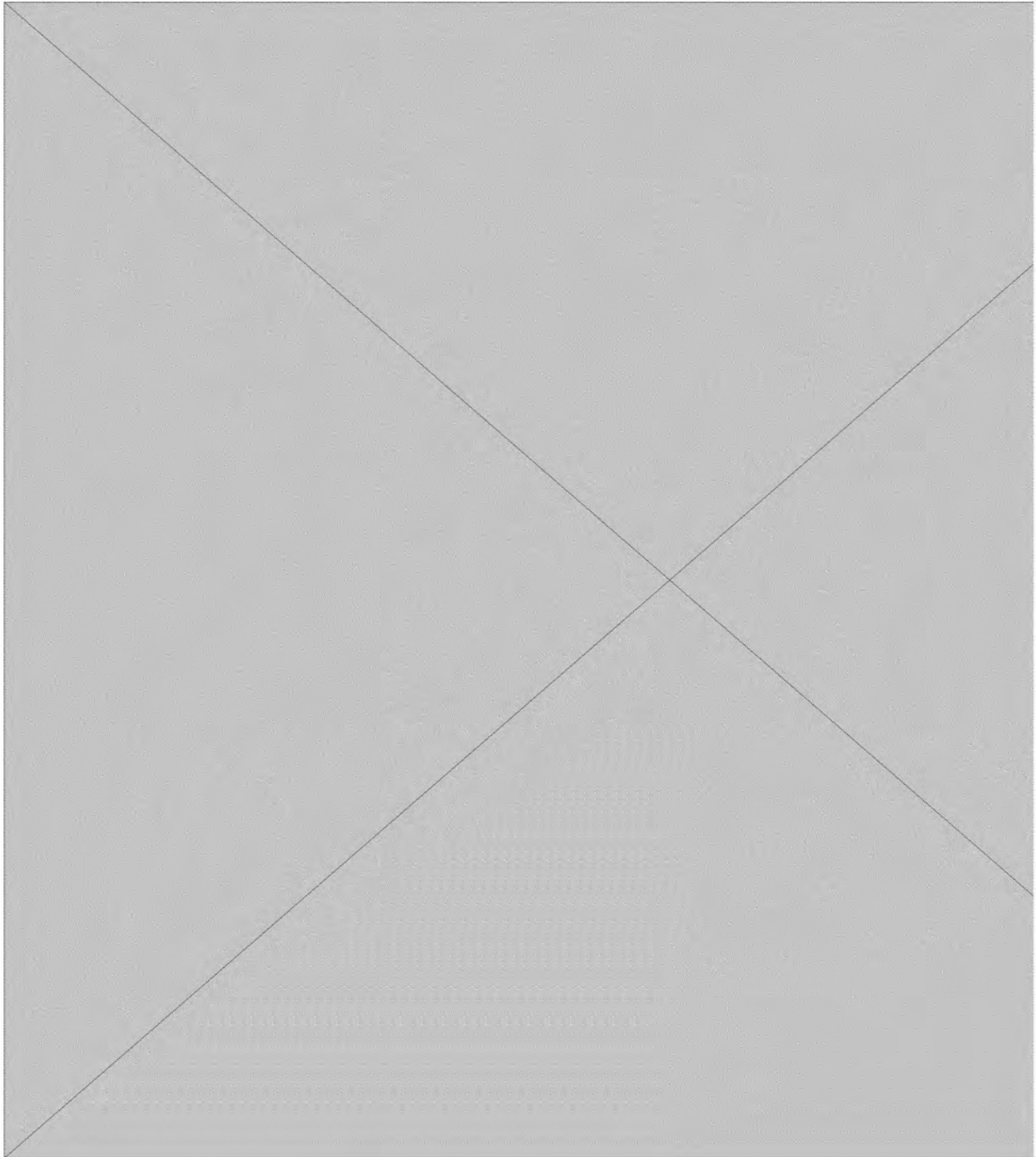
Email generated on 05Jun/9:55 PM UTC

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acts of God, dangers incident to the sea, fires, acts of government or other authorities, wars, acts of terrorism, civil unrest, strikes, riots, thefts, pilferage, epidemics, quarantines, other diseases, climatic aberrations, or from any other cause beyond BCD Travel's control. Please see additional terms and conditions related to this itinerary at [Terms and Conditions](#).

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: WSWA
Sent: Mon 6/5/2017 9:44:59 PM
Subject: Invitation to WSWA's Toast to Congress 2017

Ryan Jackson



RSVP by June 1st to attend.

This event is organized in compliance with House and Senate Ethics Rules.

Trouble seeing this image? [Click here](#)

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2448 Main Street, Santa Monica, California, 90405

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This email was sent to jackson.ryan@epa.gov

[Unsubscribe](#)

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Nick Owens
Sent: Tue 6/13/2017 7:26:46 PM
Subject: Fwd: Meeting Request w/ Administrator & Mercuria Energy Group executives
[EPA Letter Jaeggi Sherk.pdf](#)
[Sherk Bio-2017 \(002\).pdf](#)
[Daniel Jaeggi Mercuria.pdf](#)

Hi Ryan, I wanted to circle back on this request...I know y'all have been in travel.

If the Administrator is not available, how about you sir? Senior leadership would be great for this meeting.

The Mercuria team will be with the President tomorrow afternoon. They are expanding in the US. Significant operations in Oklahoma and Colorado.

Thank you.

Nick

Ex. 6 - Personal Privacy

----- Forwarded message -----

From: "Nick Owens" Ex. 6 - Personal Privacy
Date: Jun 5, 2017 11:12 AM
Subject: Meeting Request w/ Administrator & Mercuria Energy Group CEO
To: <jackson.ryan@epamail.epa.gov>, <dravis.samantha@epamail.epa.gov>
Cc:

Hi Ryan and Samantha:

I hope all's well -- you all have definitely hit the ground running!

Please see the attached meeting request sent to the Exec Sec for the Secretary on June 15th from Mercuria Energy Group, US based in Houston, TX.

Please let me know who the scheduler is; I'll circle back with them and I wanted to bring this request to your attention.

A few key facts on Mercuria below.

Thank you for your consideration.

All the best,
Nick

Ex. 6 - Personal Privacy

[Mercuria Energy Group]

-Daniel Jaeggi - Founder
World's Largest Crude Oil Trader

- Purchased JP Morgan Chase commodities unit
 - Transacted first export of American crude to China
 - Finding more way to make America an energy exporter and making China the consumer
 - Employs 1,000 US; revenues \$100 Billion
- Global HQ: Geneva, Switzerland
- US Operations HQ: Houston TX
- Significant operations in Oklahoma and Colorado



Daniel Jaeggi
President and Co-Founder

Daniel Jaeggi is President of Mercuria Energy Group. Together with Marco Dunand, he co-founded Mercuria Energy Trading S.A. in 2004, which within a few years became one of the leading energy and commodity trading companies world-wide. Previous to this, Mr. Jaeggi directed the launch of Semptra Oil Trading SARL in Europe, where together with Mr. Dunand he was responsible for trading operations in Europe and Asia.

Mercuria, primarily focused on energy, is present all along the commodities value chain with activities forming a balanced combination of commodity flows and strategic assets. More than 1,000 people are operating from offices worldwide to sustain the Group's extensive business reach with market knowledge, diversity, and experience.

In 2014, Mercuria completed the acquisition of the physical commodities unit of J.P. Morgan Chase & Co. China National Chemical Corporation (ChemChina), one of China's largest chemical companies completed a strategic investment in Mercuria in 2015.

From 1994 to 1999, Mr. Jaeggi directed trading operations at Salomon Brothers in London, covering Europe and Asia. From 1987 to 1994 while based in London at Goldman Sachs' J.Aron division, Mr. Jaeggi traded crude oil and petrochemical feed-stocks.

Prior to that, Mr. Jaeggi was at Cargill International S.A. in Switzerland, responsible for trading Naphtha and LPG.

A native Swiss citizen, Mr. Jaeggi studied political science at the *Institut d'Etudes Politiques* in Paris, the University of Geneva and the *Institut des Hautes Etudes Internationales*. He holds a master's degree in Political Science from HEI.



1 June 2017

The Honorable Scott Pruitt
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

RE: MEETING WITH MERCURIA PRESIDENT DANIEL JAEGGI & AMERICAS CEO PETER SHERK

Dear Administrator Pruitt:

I would like to request a meeting for Mercuria Energy Trading's President Daniel Jaeggi and Americas CEO Peter Sherk.

Mercuria Energy Trading is one of the world's largest commodities and energy groups. In 2014, Mercuria acquired the commodities division of JPMorgan Chase and Company.

Mr. Jaeggi and Mr. Sherk will be in Washington, DC on Thursday, 15 June 2017. They would like to meet with you to discuss the EPA's energy initiatives and how they will impact the commodities industry.

I have enclosed Mr. Sherk's and Mr. Jaeggi's biographies for your reference.

Mercuria was one of the first companies in the U.S. to ship U.S. crude to China after the four decade ban on sales was lifted last year.

Mr. Jaeggi and Mr. Sherk would like to discuss how the administration's energy initiatives will help to benefit Americans and result in the addition of new jobs in the U.S. in our industry.

Mercuria remains quite interested in seeking out new investment opportunities in the United States to create jobs, reinvigorate distressed energy assets, and contribute to the American economy.

Please let us know if you are available on that date for a meeting. Please feel free to phone me at +1 202 725 6623 or email gfenstermaker@mercuria.com.

Sincerely,

Grace Fenstermaker
Public Affairs Analyst

20 East Greenway Plaza, SUITE 650, HOUSTON, TEXAS, USA | T+1 832 209 2400 | F+1 832 209 2401 | WWW.MERCURIA.COM

AMERICAN
OVERSIGHT

EPA-17-0193 and EPA-17-0194-A-000846



Peter Sherk joined Mercuria as the new CEO of Mercuria in the Americas in October 2016.

Prior to that, Peter was co-head of the global commodities group at Morgan Stanley.

While at Morgan Stanley, Peter helped build out the bank's North American power and gas practice after joining the company as a natural gas trader in 1999. Throughout his career, he served as head of natural gas trading and head of North America power and gas trading and origination. Peter started his commodities career in crude trading.

For over 25 years, Peter has enjoyed a long and successful career across the commodities value chain.

Peter received a Bachelor's Degree in Economics from McGill University.

20 East Greenway Plaza, SUITE 650, HOUSTON, TEXAS, USA T+1832-209-2400, F +1832-209-2401 - WWW.MERCURIA.COM

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Ex. 6 - Personal Privacy
Sent: Fri 6/2/2017 9:12:51 PM
Subject: Thank you

Ex. 6 - Personal Privacy [References.pdf](#)
[Writing Sample.pdf](#)
[Resume.pdf](#)

Ryan,

Thank you for meeting with me today. It was an honor and pleasure to sit down with you to discuss the possibility of joining the Administrator's team. The position not only sounds like a great opportunity, but also one that I could add value to and fill with enthusiasm. As mentioned, I have attached a longer resume, references, and a short writing sample that I co-wrote and that was published in the ABA Environment Section's newsletter. Please let me know if anything else is needed. Look forward to hearing from you.

Best,

--

Ex. 6 - Personal Privacy

To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Black, Noel W.[NWBLACK@southernco.com]; Horton, Melissa H.[MHIGGINS@southernco.com]
From: McReynolds, Sheila S.
Sent: Mon 6/5/2017 8:33:23 PM
Subject: RE: Roundtable June 19

Hello Ryan,

Thank you for the invitation to participate in the June 19th Roundtable with Administrator Pruitt. Kim Greene, Southern Company's EVP & Chief Operating Officer will be in attendance.

Should you need anything from us prior to the meeting, I'll be glad to assist.

Kind regards,

Sheila McReynolds

Executive Assistant to Kim Greene, Chief Operating Officer

Southern Company

600 18th Street North | 15N-8170

Birmingham, AL 35203

Tel 205.257.7949 | Mobile: Ex. 6 - Personal Privacy

ssmcreyn@southernco.com



From: Black, Noel W.
Sent: Sunday, June 04, 2017 3:22 PM
To: Anderson, Bryan D. <BRANDERS@SOUTHERNCO.COM>; Horton, Melissa H. <MHIGGINS@southernco.com>; Greene, Kim <KSGREENE@southernco.com>
Subject: Fwd: Roundtable June 19

FYI

Thanks, Noel

Southern Company

Ex. 6 - Personal Privacy

Please excuse any typos...this is coming from my iPhone.

Begin forwarded message:

From: "Jackson, Ryan" <jackson.ryan@epa.gov>
Date: June 4, 2017 at 2:19:44 PM EDT
To: "Jackson, Ryan" <jackson.ryan@epa.gov>
Cc: "Gunasekara, Mandy" <Gunasekara.Mandy@epa.gov>, "Catanzaro, Michael J. EOP/WHO" <Ex. 6 - Personal Privacy>, "Schwab, Justin" <schwab.justin@epa.gov>, "Hupp, Sydney" <hupp.sydney@epa.gov>
Subject: Roundtable June 19

All --

Thank you for your interest, participation, and your help in coordinating your trade association members' participation in the round table with US EPA Administrator Scott Pruitt to discuss a regulatory path forward for the utility sector. Having an open and robust dialogue with the regulated community is a foundational component of setting meaningful and balanced environmental standards. We look forward to learning more about your perspective as the utility sector not only powers our economic growth, but is also at the forefront of developing a more efficient and cleaner energy future.

The roundtable will start at 1 pm on June 19 at the US EPA headquarters in the Green Room in the Administrator's Suite. We will follow up with an official agenda in the coming days. We have received a number of RSVP's and appreciate that. Please confirm your attendance or the attendance of your trade association members by June 12. Should you have any questions, please email or call at Ex. 6 - Personal Privacy

Sincerely,

Ryan

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy

To: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
Cc: Black, Noel W.[NWBLACK@southernco.com]; Jackson, Ryan[jackson.ryan@epa.gov]
From: Horton, Melissa H.
Sent: Thur 6/15/2017 12:56:54 PM
Subject: Re: Call

2:45 pm today would be perfect. We can use conference call # [Ex. 6 - Personal Privacy] Access code: [Ex. 6 - Personal Privacy]
Thank you again!!!

Melissa Horton
Southern Company
Federal Environmental Affairs
Washington, D.C.
Cell: [Ex. 6 - Personal Privacy]

On Jun 15, 2017, at 8:35 AM, Gunasekara, Mandy
<Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov>> wrote:

2:45 would work - is that late enough? Also, 5 pm.

-----Original Message-----

From: Horton, Melissa H. [mailto:MHIGGINS@southernco.com]
Sent: Thursday, June 15, 2017 8:33 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov>>
Subject: Re: Call

Thanks for the quick response. We had planned to walk over for the budget hearing during that time. Would anything later (or earlier) work for you? If not, we can make the earlier time work. Thank you and I'm looking forward to meeting you!

Melissa Horton
Southern Company
Federal Environmental Affairs
Washington, D.C.
Cell: [Ex. 6 - Personal Privacy]

On Jun 15, 2017, at 8:11 AM, Gunasekara, Mandy
<Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov><mailto:Gunasekara.Mandy@epa.gov>> wrote:

Good Morning,
I'm free from 1 or 1:30 this afternoon. Either of those times work for you?

-----Original Message-----

From: Horton, Melissa H. [mailto:MHIGGINS@southernco.com]
Sent: Thursday, June 15, 2017 7:49 AM
To: Gunasekara, Mandy
<Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov><mailto:Gunasekara.Mandy@epa.gov>>
Cc: Jackson, Ryan
<jackson.ryan@epa.gov<mailto:jackson.ryan@epa.gov><mailto:jackson.ryan@epa.gov>>; Black, Noel W.
<NWBLACK@southernco.com<mailto:NWBLACK@southernco.com><mailto:NWBLACK@southernco.com>>
Subject: Call

Hi Mandy. If you're available, Noel and I would like to follow up with you today or tomorrow regarding the utility dialogue on Monday, June 19. Let us know if we can set up a call and what time might be best time. Thanks you.

Melissa Horton
Southern Company
Federal Environmental Affairs
Washington, D.C.
Cell: Ex. 6 - Personal Privacy

To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Fisher, Emily[EFisher@eei.org]; Bond, Alex[ABond@eei.org]; Holdsworth, Eric[EHoldsworth@eei.org]; Shea, Quin[QShea@eei.org]
From: Steckelberg, Kathy
Sent: Thur 6/15/2017 1:23:13 PM
Subject: Call this afternoon

Got your voice mail. Can we do a conference call this afternoon? I want to involve a couple of my colleagues (copied here) who are more familiar with the substance of the issues. We can set up the logistics if you are amenable. We are kind of scattered physically today. Thanks.

Kathy Steckelberg
Sent from my iPhone

To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Black, Charlie[Charlie.Black@prime-policy.com]; Stuaan, Abbi[abbi.stuaan@prime-policy.com]; Smith, Keith[Keith.Smith@prime-policy.com]; Peck, Gregory[Peck.Gregory@epa.gov]
From: Rozsa, Gabe
Sent: Thur 6/15/2017 1:22:28 PM
Subject: RE: New Hanover County Water Issue

Ryan,

We will pull together what we know and send you something later today. We appreciate your willingness to help. The most important thing is to be assured of close cooperation between the state and local officials and EPA at all levels so that we can take the steps needed to reassure the local community that their drinking water is safe or, if there are issues that need to be addressed, that all parties are working as quickly as possible to address those issues.

Best,

Gabe

Gabe Rozsa

Managing Director

1110 Vermont Avenue, NW | Suite 1000 | Washington, DC 20005

202 530 4843 | Fax: 202 530 4800 | Cell: Ex. 6 - Personal Privacy

www.prime-policy.com



A WPP Group Company: www.wpp.com

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Thursday, June 15, 2017 7:37 AM
To: Smith, Keith <Keith.Smith@prime-policy.com>
Cc: Rozsa, Gabe <Gabe.Rozsa@prime-policy.com>; Black, Charlie <Charlie.Black@prime-policy.com>; Stuaan, Abbi <abbi.stuaan@prime-policy.com>
Subject: Re: New Hanover County Water Issue

If you have some background information you'd like us to review or individuals you would like us to meet with to gain additional information I'm happy to do that. If you have the questions submitted I'm happy to check on that as well, however, your emails go not provide much to go off of and I could use your help with that.

Ryan Jackson

Chief of Staff

U.S. EPA

Ex. 6 - Personal Privacy

On Jun 14, 2017, at 10:48 PM, Smith, Keith <Keith.Smith@prime-policy.com> wrote:

And Gabe you can tell Ryan that the NC DEQ and New Hanover County have submitted dozens of questions to the EPA HQ about the chemical in question GenX. It apparently has not been analyzed by the EPA and its safety is questioned. thanks

From: Rozsa, Gabe
Sent: Wednesday, June 14, 2017 10:35 PM
To: Jackson, Ryan; Black, Charlie
Cc: Stuaan, Abbi
Subject: RE: New Hanover County Water Issue

Ryan,

Thank you for the quick response. I think it is the Chemours facility near Fayetteville, NC and the chemical is used in making Teflon. The chemical has been found downstream from the plant and is affecting the drinking water of the local communities including Wilmington. Let me know if you need more info. I am also reaching out to Greg Peck in the Water Office whom I have known for a couple of decades but this likely affects more than just the Water office.

Gabe

From: Jackson, Ryan [<mailto:jackson.ryan@epa.gov>]
Sent: Wednesday, June 14, 2017 8:47 PM
To: Black, Charlie <Charlie.Black@prime-policy.com>
Cc: Rozsa, Gabe <Gabe.Rozsa@prime-policy.com>; Stuaan, Abbi <abbi.stuaan@prime-policy.com>
Subject: RE: New Hanover County Water Issue

Thank you for the email, but I'll need additional information to be able to respond to this email.

Ryan.

From: Black, Charlie [<mailto:Charlie.Black@prime-policy.com>]
Sent: Wednesday, June 14, 2017 5:01 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Rozsa, Gabe <Gabe.Rozsa@prime-policy.com>; Stuaan, Abbi <abbi.stuaan@prime-policy.com>
Subject: New Hanover County Water Issue

Ryan,

Our firm represents New Hanover County in North Carolina I am writing on behalf of Woody White, Chairman of the New Hanover County Commission, to ask for your help to expedite EPA's action to address a serious water quality problem.

I understand that EPA HQ Enforcement officials are working on dozens of questions that need to be answered promptly for the people of New Hanover County and the North Carolina Department of Environmental Quality.

Ryan, I am sure you understand the local community's concerns and their need for quick answers. Anything you can do to move this along would be much appreciated.

Thank you for your consideration.

Best regards,

Charlie

Charlie Black

Chairman

1110 Vermont Avenue, NW | Suite 1000 | Washington, DC 20005

202 530 1500 | www.prime-policy.com

<image001.png>

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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Fannon, Frank
Sent: Fri 6/2/2017 5:54:21 PM
Subject: FW: CSIS Invitation | Energy Futures Forum | 06/15

FYI below – the public event which precedes the private dinner.

Regards,

Frank

From: CSIS Energy Program [mailto:energy@csis.org]
Sent: Friday, June 02, 2017 1:39 PM
Subject: CSIS Invitation | Energy Futures Forum | 06/15

Emerging energy trends conference
with the Energy & National Security Program

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From the CSIS Energy & National Security Program

Energy Futures Forum

June 15, 2017
8:30am – 2:30pm

The CSIS Energy & National Security Program launched the Energy Futures Forum (EFF) - an annual event and research process - to identify and explore issues that could potentially impact the energy sector in significant ways over the next 10 years. Rather than provide one outlook of the future, EFF is designed to challenge the energy community's thinking about how a variety of issues may evolve over a medium-term timeframe and what those potential changes might mean for energy policymaking and commercial decision-making. Now in its third year, EFF seeks to impart new knowledge and challenge conventional thinking on the medium-term energy future in order to improve the quality of energy policymaking and corporate decision-making.

Agenda

8:30 - 8:45 am **Welcome and Project Overview**

Sarah Ladislaw - Director and Senior Fellow, CSIS Energy & National Security Program

8:45 - 9:15 am **Seeing the Bigger Picture
– Interpreting Energy Trends**

Mark Nelson - Vice President, Strategic Planning, Chevron

Adam Sieminski - Schlesinger Chair for Energy & Geopolitics, CSIS

9:15 - 10:45 am **Future Structure of the Oil and Gas Industry**

What will be the impact of sustained low and volatile energy prices on the global oil and gas market?

Rebecca Fitz - Senior Director, BCG Center for Energy Impact

Jamie Webster - Senior Director, BCG Center for Energy Impact

Rabah Arezki - Director, Commodities Research Team, International Monetary Fund

Moderator: **Frank Verrastro** - Senior Vice President and Trustee Fellow, CSIS Energy & National Security Program

11:00 - 12:30 pm **Implications of the Rise of Populism
on Trade Flows, Governance, and
Infrastructure**

How will global populism impact energy and climate policy?

Alexander Kazan - Managing Director, Global Strategy and Analytics, Eurasia Group

Amy Hemingway - Senior Vice President & Group Head, Edelman Energy

Moderator: **Michael Levi** - Senior Advisor, ClearView Energy Partners

12:30 pm Lunch

12:45 - 2:15 pm **The Greening of Finance**

How will the inclusion of climate and sustainability metrics into the energy finance arena change the relative competitiveness of various fuels going

forward?

Simon Zadek - Co-Director, Inquiry into Design Options for Sustainable Financial System, United Nations Environment Program (UNEP) (invited)

Antonia Bullard - Vice President, Energy, IHS Markit

Peer Stein - Advisor & Head of Climate Business, IFC

Moderator: **Sarah Ladislav** - Director and Senior Fellow, CSIS Energy & National Security Program

2:15 - 2:30 pm Wrap-up and Close

We will operate under Chatham House Rule and hope all the participants will engage in an active dialogue. The strategic insights from this event will inform our ongoing research and funnel into a final product. Please visit [our EFF Project page](#) for more information regarding the previous years' Forums.

This event is by invitation only. Please RSVP no later than June 14th at energy@csis.org.

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To: Davis, Gail[Davis.Gail@epa.gov]; EPA@BCDTRAVEL.COM[EPA@BCDTRAVEL.COM]; Jackson, Ryan[jackson.ryan@epa.gov]; Willis, Sharnett[Willis.Sharnett@epa.gov]
From: EPA@BCDTRAVEL.COM
Sent: Fri 6/2/2017 5:00:21 PM
Subject: Travel Itinerary for JACKSON / RYAN T

TRAVELER NOTICE - Many airlines charge fees for baggage and other services. Amounts vary by airline and are subject to change.

Travelers are responsible for verifying all fees charged by individual carriers.

Please visit the operating carrier website of your ticketed itinerary for applicable fees.

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/2017	FCO		Confirmed		Economy / X
06/13/2017	FCO	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Economy / K
06/13/2017		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed		PMEconomy / K

Delta Air Lines Flight DL 800 Economy

Depart:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

[Weather](#)

Arrive:

Rome, Italy

[Weather](#)

Thursday, June 8, 2017

Duration: 8 hour(s) and 45 minute(s) Non-stop

Status: Confirmed - Delta Air Lines Record Locator: DL 800

Meal: Dinner

Equipment: Airbus Industrie A330-300

Seat: 38B (Non smoking) Confirmed

Distance: 4263 miles / 6859.167 kilometers

CO2 Emissions: 1,594.36 lbs/724.71 kgs

Remarks: SEAT ASSIGNMENT CONFIRMED:38B
FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY.
PLEASE CHECK WWW.DELTA.COM
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

Delta Air Lines Flight DL 800 Economy

Depart:

Fiumicino, Terminal 1

[Weather](#)

Rome, Italy

Tuesday, June 13, 2017

Arrive:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

[Weather](#)

Duration: 9 hour(s) and 35 minute(s) Non-stop

Status: Confirmed - Delta Air Lines Record Locator: DL 800

Meal: Lunch

Equipment: Boeing 777-200/ 200ER

*Operated By: Alitalia

Seat: Assigned at Check-in

Distance: 4263 miles / 6859.167 kilometers

CO2 Emissions: 1,594.36 lbs/724.71 kgs

Remarks: NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

Delta Air Lines Flight XXXX-XXXX-XXXX-XXXX Economy

Depart:

Weather

Arrive:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Weather

Duration: 1 hour(s) and 47 minute(s) Non-stop

Total duration: **15 hour(s) and 37 minute(s) including layover(s)**

Status: Confirmed - Delta Air Lines Record Locator:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Equipment: Canadair Regional Jet

*Operated By: Endeavor Air Dba Delta Connection

Seat: 03C (Non smoking) Confirmed

Distance: 227 miles / 365.243 kilometers

CO2 Emissions: 124.85 lbs/56.75 kgs

Remarks: NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

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ACCORDANCE WITH YOUR AGENCY'S BUSINESS RULES BUT NO LESS
THAN 3 BUSINESS DAYS PRIOR TO DEPARTURE TO ENSURE TICKETING.
THIS 48 HOUR CANCELLATION RULE DOES NOT APPLY TO
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CONNECTIONS ON MORE THAN ONE AIRLINE OR THESE RESERVATIONS REQUIRE SEPARATE AIR TICKETS.

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02Jun/12:00PM

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Vendor	Fare information	Refund restrictions	Change restrictions	Ticket information

		before departure	after ticketing	
Air	Total: USD 1,681.06	REFUND RESTRICTIONS MAY APPLY	CHANGE RESTRICTIONS MAY APPLY	
07Jun * 13Jun * 13Jun				
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Forbidden Dangerous Items Examples:

Paints, lighter fluid, fireworks, tear gases, oxygen bottles and radiopharmaceuticals. There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person. For further information, contact your airline representative.

Note: Spare batteries and fuel cells are not permitted in checked or hold baggage. These items MUST be packed in carry-on baggage. If your carry-on bag is gate checked, the spare batteries and fuel cells must be removed and carried in the cabin.

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To: Dominguez, Alexander[dominguez.alexander@epa.gov]
Cc: Jackson, Ryan[jackson.ryan@epa.gov]; Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]; Stephen Fotis[SCF@vnf.com]
From: John Di Stasio
Sent: Thur 6/15/2017 12:09:19 PM
Subject: Re: June 19 EPA Roundtable – Logistics and Agenda

Alex

Thank you for the information. Our panelists will be:

Mark Bonsall, SRP
Phil Wilson, LCRA
Steve Wright, Chelan PUD
Kevin Nordt, Grant PUD

Support will be:

John Di Stasio, President, LPPC (assuming you only want utility CEO's as panelists. I am a former CEO, (Sacramento Municipal Utility District), but now serve as Association President. If not I am happy to serve as a panelist

Stephen Fotis, Van Ness Feldman

We will be there at 12:30pm

Thank you

John

John Di Stasio
President, Large Public Power Council
1050 Thomas Jefferson St, 5th Floor
Washington, DC 20007
202-298-3723 office
Ex. 6 - Personal Privacy cell
john@lppc.org
www.LPPC.org

On Jun 15, 2017, at 4:31 AM, Dominguez, Alexander <dominguez.alexander@epa.gov> wrote:

All --

Thank you for your participation and help coordinating Monday's roundtable with Administrator Pruitt.

The roundtable will start at 1:00PM on Monday, June 19th at the U.S. EPA Headquarters in the Green Room of the Administrator's Suite. The address is 1200 Pennsylvania Avenue, N.W., Washington, DC 20460. Upon arrival you will enter the William Jefferson Clinton Building North Entrance, which is located next to the Federal Triangle Metro entrance.

Please arrive no later than 12:30PM as you will be required to go through security when entering the building. A staff member will be there to escort you to the Green Room where there will be coffee and light refreshments. There will be a limited number of perimeter seating so please let me know who all will be attending as support staff to the panelist. Additionally, please confirm the names of your trade association members attending for a final headcount.

Attached is Monday's agenda. As you can see the meeting will last approximately two hours. We are looking forward to everyone attending and if you have any questions please email or call at Ex. 6 - Personal Privacy

Best,

Alex Dominguez

Policy Analyst to the Senior Advisor to

the Administrator for Air and Radiation

U.S. Environmental Protection Agency

1200 Pennsylvania Ave., N.W.

Washington, D.C. 20460

<Agenda_EPA Roundtable June19.docx>

To: Ryan Jackson [Ex. 6 - Personal Privacy] Jackson,
Ryan[jackson.ryan@epa.gov]
From: Price, Wendi (Inhofe)
Sent: Tue 6/13/2017 4:28:30 PM
Subject: FW: Is there a red line of this I could get for Pruitt?
[IMG_0756.jpg](#)

Hey! Just wanted to make sure you saw this email? Would you like me to have someone run this down to your office or do you want to pick it up?

-----Original Message-----

From: Price, Wendi (Inhofe)
Sent: Thursday, June 08, 2017 1:13 PM
To: 'Jackson, Ryan' <jackson.ryan@epa.gov>; Holland, Luke (Inhofe) <Luke_Holland@inhofe.senate.gov>
Subject: RE: Is there a red line of this I could get for Pruitt?

Look what we have back. I have it sitting on my desk. Let me know if you or someone want to pick it up or how we should get to you.

-----Original Message-----

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Wednesday, June 07, 2017 2:03 PM
To: Holland, Luke (Inhofe) <Luke_Holland@inhofe.senate.gov>; Price, Wendi (Inhofe) <Wendi_Price@inhofe.senate.gov>
Subject: Is there a red line of this I could get for Pruitt?

Senate of the United States

In Executive Session

February 17, 2017

Resolved, That the Senate advise and consent to the following nomination:

The following-named person to be Administrator of the Environmental

Protection Agency:

Scott Pruitt
of Oklahoma

Attest:

Julie E. Adams

Secretary.



To: Jackson, Ryan[jackson.ryan@epa.gov]
From: kevin chmielewski
Sent: Sun 6/11/2017 1:11:54 PM
Subject: Bloomberg: U.S. Environment Chief Exits G-7 Climate Talks in Italy Early

U.S. Environment Chief Exits G-7 Climate Talks in Italy Early

Bloomberg

U.S. environment chief Scott Pruitt is being recalled from Group of Seven climate talks in Italy. Pruitt, who as Environmental Protection Agency administrator successfully campaigned for the U.S. to quit the landmark Paris climate agreement, will leave Bologna for a meeting with President Donald Trump just hours after arriving Sunday, according to a spokesman for the G-7 talks, Davide Russo. Jane Nishida, acting EPA assistant administrator, will attend in his place. Scott Pruitt at the G7 [Read the full story](#)

Shared from [Apple News](#)

Sent from my iPhone

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Liebowitz, Daniel
Sent: Thur 6/1/2017 1:33:05 PM
Subject: Impact of Delays for New Chemical Substance Registrations

Hello Mr. Jackson,

We spoke over the phone a few weeks ago regarding the impact of delays related to the EPA PMN review process under the revised TSCA regulations. You requested information regarding the value of each PMN in annual sales for our business. It is difficult to provide an accurate value for annual sales as these are all new products to the coatings market. However a rough estimate would be in the \$300,000-\$500,000/year range for all 13 delayed PMNs assessed under the revised regulations. The biggest impact of these delays is the delay in availability of these new products for customer evaluations and the uncertainty of whether they will be successfully registered. In one case that has been under review for over 1-year, the primary customer for this new product has indicated that during this 1-year delayed review period, they have developed another technical solution and may not need to purchase this product. In addition to the impact of the delays in the review process, another concern is the assessment of uses that some of our products were not designed for and were never intended.

Regards,

Dan

Daniel Liebowitz

Allnex USA Inc.

Regulatory Compliance Manager, Americas

Product Stewardship & Regulatory Affairs

78 Rivergate Drive

Wilton, CT 06897

Office: 203-834-0426

Cell: Ex. 6 - Personal Privacy



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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Jeremy Christopher Carl
Sent: Sun 6/11/2017 12:45:05 AM
Subject: Candidates for your Assistant Administrator Position

Ryan,

I went ahead and touched base with friends from a number of my networks to see if I could find some people who might fit what you are looking for. Below is an initial tranche of names—I expect I will get in some additional names later and I'll send them along going forward. I don't have contact info for all of them, but it should be pretty easy to obtain. All of the candidates have doctorates and work experience in a relevant field.

All of the names below of people who should at least take your call and can at the very least offer some helpful advice even if you think they are not the right fit or if they are not interested. I've listed each of them with the name and description of the person who referred them to me so that you can use the person who referred them in your introduction

Hope this is somewhat helpful—as I said I'll send along other names as they come in.

As I mentioned earlier I am going to DC for an event on Tuesday and Wednesday that Joe Bast/Heartland is putting together on EPA reform—not sure whether it was on your radar, but they are flying in a number of us from out of the area. If you'd like to meet up in person, I'm free on Tuesday from early morning until about 1:00 P.M. and Wednesday from about 2:30-5:30

Best,

Jeremy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy so I assume he is already on your radar—but several folks were very complimentary

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

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Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

To: Davis, Gail[Davis.Gail@epa.gov]; EPA@BCDTRAVEL.COM[EPA@BCDTRAVEL.COM];
Jackson, Ryan[jackson.ryan@epa.gov]; Willis, Sharnett[Willis.Sharnett@epa.gov]
From: EPA@BCDTRAVEL.COM
Sent: Fri 6/2/2017 4:46:08 PM
Subject: UPDATED 02Jun - Travel Receipt for JACKSON/RYAN T Travel date 07Jun
Travel Receipt Communication Attachment - M2PZWQ - June 7 2017.PDF

TRAVELER NOTICE - Many airlines charge fees for baggage and other services. Amounts vary by airline and are subject to change.

Travelers are responsible for verifying all fees charged by individual carriers.

Please visit the operating carrier website of your ticketed itinerary for applicable fees.

To view your trip via Viewtrip, please click [here](#)

Printer Friendly

Total Amount: 53.24 USD

This ticket information applies to the following trip(s):

Delta Air Lines Flight [Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F] to Rome on June 07

Delta Air Lines Flight [] from Rome to [Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F] on June 13 (Operated By: Alitalia S.P.A)

Delta Air Lines Flight [Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F] on June 13 (Operated By: Endeavor Air Db a Delta Connection)

ElectronicTicket Number: [Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F]

Invoice Number: 000168383

Ticket Amount: 1,681.06 USD

Prior Ticket: [Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F]

Old Ticket Value: 3,458.24 USD

Penalty/Exchange Fee: 0.00 USD

Add/Collect: 0.00 USD

Form of Payment: CA*****5946

Service Fee Number: 8900693781122

Service Fee Amount: 53.24 USD
Form of Payment: CA*****5946

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/2017		FCO DL	Confirmed		Economy / X
06/13/2017	FCO	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Economy / K
06/13/2017		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed		Economy / K

[Add to Calendar](#) [Need Help?](#)

Delta Air Lines Flight Economy [Online check-in](#)

Depart: [Weather](#)

Arrive: [Weather](#)

Duration: 8 hour(s) and 45 minute(s). Non-stop

Status: Confirmed - Delta Air Lines Record Locator:

Meal: Dinner

Equipment: Airbus Industrie A330-300

Seat: 38B (Non smoking) Confirmed

Distance: 4263 miles / 6859.167 kilometers

CO2 Emissions: 1,594.36 lbs/724.71 kgs

Remarks: SEAT ASSIGNMENT CONFIRMED: 38B
FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY

PLEASE CHECK WWW.DELTA.COM
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

[Add to Calendar](#) [Need Help?](#)

Delta Air Lines Flight DL4153 Economy

[Online check-in](#)

Depart: Fiumicino, Terminal 1
Rome, Italy

[Weather](#)

Arrive: Tuesday, June 13 2017

[Weather](#)

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Duration: 9 hour(s) and 35 minute(s) Non-stop
Status: Confirmed - Delta Air Lines Record Locator: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Meal: Lunch
Equipment: Boeing 777-200/ 200ER
*Operated By: Alitalia
Seat: Assigned at Check-in
Distance: 4263 miles / 6859,167 kilometers
CO2 Emissions: 1,594.36 lbs/724.71 kgs

Remarks: NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

Delta Air Lines Flight DL4153 Economy

[Online check-in](#)

Depart: John F Kennedy Intl, Terminal 4
New York, New York, United States
06:30 PM Tuesday, June 13 2017

[Weather](#)

Arrive: Dulles Intl
Washington, District of Columbia, United States
08:17 PM Tuesday, June 13 2017

[Weather](#)

Duration: 1 hour(s) and 47 minute(s) Non-stop
Total duration: 15 hour(s) and 37 minute(s) including layover(s)
Status: Confirmed - Delta Air Lines Record Locator: F9CXVWV
Equipment: Canadair Regional Jet
*Operated By: Endeavor Air Dba Delta Connection
Seat: 03C (Non smoking) Confirmed
Distance: 227 miles / 365.243 kilometers
CO2 Emissions: 124.85 lbs/56.75 kgs

Remarks: NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

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THE BCD TRAVEL TEAM AT 1-866-964-1346
FOR OUTSIDE THE US CALL COLLECT 770-829-2609
FOR THE HEARING IMPAIRED- PLEASE DIAL 711
TO ACCESS RELAY SERVICE- PROVIDE PHONE
NUMBER OF 1-866-964-1346 TO ACCESS TRAVEL
DUE TO RECENT CHANGES IN THE FY15 GOVERNMENT CITY PAIR
PROGRAM/CPP YOUR AIR RESERVATIONS ARE SUBJECT TO
CANCELLATION BY THE AIRLINES IF NOT TICKETED AT LEAST

48 HOURS PRIOR TO SCHEDULED DEPARTURE
PLEASE ENSURE ALL NECESSARY APPROVALS ARE PROCESSED IN
ACCORDANCE WITH YOUR AGENCY'S BUSINESS RULES BUT NO LESS
THAN 3 BUSINESS DAYS PRIOR TO DEPARTURE TO ENSURE TICKETING.
THIS 48 HOUR CANCELLATION RULE DOES NOT APPLY TO
INTERNATIONAL RESERVATIONS UNLESS YOUR TRIP HAS DOMESTIC
CONNECTIONS ON MORE THAN ONE AIRLINE OR THESE
RESERVATIONS REQUIRE SEPARATE AIR TICKETS.

RECONFIRM INTERNATIONAL FLIGHTS 72HRS PRIOR TO TRAVEL
CHECK IN 2 1/2 HOURS PRIOR FOR INTERNATIONAL TRAVEL
A PASSPORT VALID 6 MONTHS BEYOND INTENDED STAY
IS REQUIRED FOR THIS ITINERARY
ADVISED OF DOCUMENT REQUIREMENTS FOR THIS ITINERARY
CHECK WWW.CDC.GOV/TRAVEL FOR TRAVEL HEALTH ADVISORIES
PROPER DOCUMENTATION IS REQUIRED FOR ENTRY INTO
ARRIVAL COUNTRY
CHECK WWW.DHS.GOV/TRAVEL-ALERTS
FOR COUNTRY TRAVEL ADVISORIES
CONTACT THE DESIGNATED GOVERNMENT AGENCY IN YOUR
COUNTRY OF CITIZENSHIP FOR PASSPORT/VISA REQUIREMENTS.
TRAVEL INTO U.S. MAY REQUIRE ESTA AUTHORIZATION.
VISIT [HTTPS://ESTA.CBP.DHS.GOV](https://esta.cbp.dhs.gov) FOR DETAILS.
CHECK-IN TIMES ARE 90 MINUTES PRIOR TO DEPARTURE
FOR DOMESTIC FLIGHTS OR 120 MINUTES FOR INTERNATIONAL
ELECTRONIC TICKET/S/ WILL BE ISSUED FOR THIS TRIP
AIRPORT FEES MAY BE COLLECTED UPON ARRIVAL
OR DEPARTURE.
CHECKED BAGGAGE POLICIES VARY BASED ON CARRIER AND FINAL
WITH YOUR TRAVEL CONSULTANT OR THE AIRLINES WEBSITE.

**
**
DESTINATION. FOR THE LATEST INFORMATION PLEASE CHECK

02Jun/11:45AM

TRAVELER NOTICE – Please check with your carrier(s) for travel documents required (Passport, VISA, etc.) and security requirements regarding permitted and prohibited articles and goods related to your travel.

Air	Car	Hotel	Rail	Other
1,681.06 USD				
Vendor	Fare information	Refund restrictions before departure	Change restrictions after ticketing	Ticket information
Air <div><div></div><div>7 Jun</div><div>13 Jun</div><div>13 Jun</div></div>	Total: USD 1,681.06	REFUND RESTRICTIONS MAY APPLY	CHANGE RESTRICTIONS MAY APPLY	
All quotes are provider quotes excluding possible taxes and charges en route. Currency conversions shown in this itinerary receipt are done using the bank rate applicable at the date shown in the header of this document. Please note that some local taxes and charges may be invoiced during your trip and cannot be shown at time of reservation.				

Advice to Passengers

Transportation of Hazardous Materials

Federal law forbids the carriage of hazardous material aboard the aircraft, in your luggage, or on your person. A violation can result in 5 years imprisonment and penalties of \$250,000 or more (49 U.S.C 5124). Hazardous materials include explosives, compressed gases, flammable liquids and solids, oxidizers, poisons, corrosives and radioactive materials.

Forbidden Dangerous Items Examples:

Paints, lighter fluid, fireworks, tear gases, oxygen bottles and radiopharmaceuticals. There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person. For further information, contact your airline representative.

Note: Spare batteries and fuel cells are not permitted in checked or hold baggage. These items MUST be packed in carry-on baggage. If your carry-on bag is gate checked, the spare batteries and fuel cells must be removed and carried in the cabin.

Email generated on 02Jun/4:45 PM UTC

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To view your trip via Viewtrip, please click [here](#)

Printer Friendly

Ticket Receipt

Total Amount: 53.24 USD

This ticket information applies to the following trip(s):

Delta Air Lines Flight [redacted] from [redacted] to Rome on June 07

Delta Air Lines Flight [redacted] from Rome to [redacted] on June 10 (Operated By: Alitalia S.P.A)

Delta Air Lines Flight [redacted] from [redacted] Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F on June 10 (Operated By: Endeavor Air DbA Delta Connection)

Electronic Ticket Number: [redacted] Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Invoice Number: 000168383

Ticket Amount: 1,681.06 USD

Prior Ticket: [redacted] Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Old Ticket Value: 3,458.24 USD

Penalty/Exchange Fee: 0.00 USD

Add/Collect: 0.00 USD

Form of Payment: CA*****5946

Service Fee Number: 8900693781122

Service Fee Amount: 53.24 USD

Form of Payment: CA*****5946

Travel Summary – Agency Record Locator

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/2017	[redacted] FCO	DL [redacted]	Confirmed		Economy / X
06/13/2017	FCO [redacted]	DL [redacted]	Confirmed	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Economy / K
06/13/2017	[redacted]	DL [redacted]	Confirmed		Economy / K

AIR - Wednesday, June 7 2017 - Agency Record Locator		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Add to Calendar Need Help?
Delta Air Lines Flight		Economy	Online check-in
Depart:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		
Arrive:	Fiumicino, Terminal 3 Rome, Italy Thursday, June 8 2017		
Duration:	8 hour(s) and 45 minute(s) Non-stop		
Status:	Confirmed - Delta Air Lines Record Locator		
Meal:	Dinner		
Equipment:	Airbus Industrie A330-300		
Seat:	38B (Non smoking) Confirmed		
Distance:	4263 miles / 6859.167 kilometers		
CO2 Emissions:	1,594.36 lbs/724.71 kgs		
Remarks:	SEAT ASSIGNMENT CONFIRMED: 38B FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY. PLEASE CHECK WWW.DELTA.COM NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED		

AIR - Tuesday, June 13 2017 - Agency Record Locator		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Add to Calendar Need Help?
Delta Air Lines Flight		Economy	Online check-in
Depart:	Fiumicino, Terminal 1 Rome, Italy Tuesday, June 13 2017		
Arrive:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		
Duration:	9 hour(s) and 35 minute(s) Non-stop		
Status:	Confirmed - Delta Air Lines Record Locator		
Meal:	Lunch		
Equipment:	Boeing 777-200/ 200ER		
*Operated By:	Alitalia		
Seat:	Assigned at Check-in		
Distance:	4263 miles / 6859.167 kilometers		
CO2 Emissions:	1,594.36 lbs/724.71 kgs		
Remarks:	NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED		

AIR - Tuesday, June 13 2017 - Agency Record Locator		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Add to Calendar Need Help?
Delta Air Lines Flight		Economy	Online check-in
Depart:			
Arrive:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		
Duration:	1 hour(s) and 47 minute(s) Non-stop		
Total duration:	15 hour(s) and 37 minute(s) including layover(s)		
Status:	Confirmed - Delta Air Lines Record Locator		
Equipment:	Canadair Regional Jet		
*Operated By:	Endeavor Air DBA Delta Connection		
Seat:	03C (Non smoking) Confirmed		
Distance:	227 miles / 365.243 kilometers		
CO2 Emissions:	124.85 lbs/56.75 kgs		
Remarks:	NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED		

Remarks

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PLEASE ENSURE ALL NECESSARY APPROVALS ARE PROCESSED IN
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FOR DOMESTIC FLIGHTS OR 120 MINUTES FOR INTERNATIONAL
ELECTRONIC TICKETS WILL BE ISSUED FOR THIS TRIP
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OR DEPARTURE.
CHECKED BAGGAGE POLICIES VARY BASED ON CARRIER AND FINAL
WITH YOUR TRAVEL CONSULTANT OR THE AIRLINE'S WEBSITE.

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02Jun/11:45AM

TRAVELER NOTICE – Please check with your carrier(s) for travel documents required (Passport, VISA, etc.) and security requirements regarding permitted and prohibited articles and goods related to your travel.

Estimated trip total				1,681.06 USD
Air	Car	Hotel	Rail	Other
1,681.06 USD				
Fare details: Ticketed				
Vendor	Fare information	Refund restrictions before departure	Change restrictions after ticketing	Ticket information
Air 7Jun 13Jun 13Jun	Total: USD 1,681.06	REFUNDRESTRICTIONS MAY APPLY	CHANGERESTRICTIONS MAY APPLY	
All quotes are provider quotes excluding possible taxes and charges en route. Currency conversions shown in this itinerary receipt are done using the bank rate applicable at the date shown in the header of this document. Please note that some local taxes and charges may be invoiced during your trip and cannot be shown at time of reservation.				

Advice to Passengers

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Forbidden Dangerous Items Examples:

Paints, lighter fluid, fireworks, tear gases, oxygen bottles and radiopharmaceuticals. There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person. For further information, contact your airline representative.

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Email generated on 02Jun/4:45 PM UTC

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To: Jackson, Ryan[jackson.ryan@epa.gov]; Greenwalt, Sarah[greenwalt.sarah@epa.gov]
Cc: Davis, Patrick[davis.patrick@epa.gov]
From: Jay Martin
Sent: Tue 6/6/2017 7:52:38 PM
Subject: RE: CWA permits
[EPA Summary 6.6.17.docx](#)
[EPA Letter to Contura Energy.pdf](#)
[DMME Letter to McGuigan 6.6.17.pdf](#)

All,

Thanks again for your willingness to consider the permitting issues Contura Energy currently has before EPA.

While the first attachment includes a summary of the outstanding permitting issues we had previously discussed, I would be remiss to not also include additional information for your review regarding a more recent EPA action that has the potential to add a significant cost and man-hour burden upon our company.

-

Paramount 308 Letter in VA

The second attachment is a Clean Water Act Section 308 information request letter that we received last week from EPA's Region III Office. This is something that I have been in direct contact on already with Patrick Davis, who I also copied on this email. Conversations with Patrick have been helpful, but we continue to be extremely concerned with this EPA action being taken – in direct conflict with the wishes of the state regulatory agency – and the broader precedent it could create.

Related, the third attachment is a letter the Virginia Department of Mines, Minerals and Energy (DMME) sent today to David McGuigan, the Associate Director in the Office of NPDES Compliance and Enforcement in regards to the 308 letter we received.

Finally, it's worth noting that our CEO, Kevin Crutchfield, received a message from McGuigan requesting a "conference call to discuss the questions regarding the 308 issue." This outreach is a bit out of the ordinary and I wanted to flag for you just to make sure everyone is aware of the

various moving parts regarding this issue in advance of the DMME call with EPA Region III scheduled for this upcoming Thursday.

Thanks in advance and please don't hesitate to contact me with any questions.

Jay



Jay Martin
VP – Government Affairs

1455 Pennsylvania Avenue NW, Suite 320

Washington D.C. 20004

t: 202.347.5774 | m: [Ex. 6 - Personal Privacy](#)

jay.martin@conturaenergy.com

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Monday, June 5, 2017 10:31 AM
To: Jay Martin <Jay.Martin@conturaenergy.com>
Cc: Greenwalt, Sarah <greenwalt.sarah@epa.gov>
Subject: Re: CWA permits

Jay, can you send us information on the CWA permits your working with the Agency to get?

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy



DIVISIONS
ENERGY
GAS AND OIL
GEOLOGY AND MINERAL RESOURCES
MINED LAND RECLAMATION
MINERAL MINING
MINES
ADMINISTRATION

COMMONWEALTH OF VIRGINIA

Department of Mines, Minerals and Energy

P. O. Drawer 900
Big Stone Gap, Virginia 24219-0900
(276) 523-8100 FAX (276) 523-8148
www.dmme.virginia.gov

June 6, 2017

Mr. David B. McGuigan
Associate Director
Office of NPDES Compliance and Enforcement
Water Protection Division
U. S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Mr. McGuigan:

The Division of Mined Land Reclamation (DMLR) Division Director Randy Casey shared a copy of the Clean Water Act Section 308 Information Requirement that EPA issued to Contura Energy on May 25th. I am deeply concerned about the action that EPA has taken. First and foremost, the Department of Mines, Minerals and Energy (DMME), which is the agency responsible for NPDES permitting and compliance in Virginia's coalfields, never requested this. It is our understanding this action was reported to EPA as being initiated by DMME and that is simply not the case. DMME does not support this action and is not in agreement that it is consistent with Section 308.

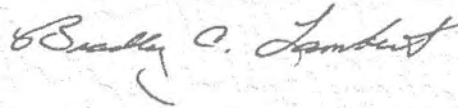
Second, all of the requested permitting data and information is readily available within DMME and is also electronically accessible to EPA; thus, it is punitive, inefficient, and beyond the regulatory confines to force Contura to pull and submit this information under a threat of penalty for delay or omission.

Third, DMME does not agree with EPA's interpretation regarding underdrains, which appears to be the focus of the Information Requirement. Additionally, we find the timing confusing considering we just arranged a call to discuss this issue on June 8th. DMME believes it improper for EPA to single out individual permittees like Contura and Red River (which previously received a similar information requirement) when our agencies are in fundamental disagreement over what is the regulatory requirement, which we have not had a chance to discuss, and which has widespread programmatic implications across numerous states. This proposed action would not only apply to coal mining fills, but as being applied by EPA, could be interpreted as a requirement for numerous other constructed fills such as road fills.

Mr. David B. McGuigan
Page 2
June 6, 2017

For the above stated reasons, DMME requests EPA rescind the Information Requirement. Once we have had a chance to reach a common interpretation of Section 308 and have established associated regulatory program expectations, DMME stands ready to take any necessary appropriate action.

Sincerely,



Bradley C. Lambert
Deputy Director

c: Lawrence Starfield, EPA
James Golden, DEQ
John Warren, DMME



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029

Received
JUN 01 2017
Executive Department

MAY 25 2017

Via UPS

Mr. Kevin S. Crutchfield, Chief Executive Officer and Director
Contura Energy, Inc.
340 Martin Luther King Jr. Blvd.
Bristol, Tennessee 37620

Re: Information Requirement Pursuant to Section 308 of the Clean Water Act

Dear Mr. Crutchfield:

Enclosed is an Information Requirement issued to Contura Energy, Inc. ("Contura"). The United States Environmental Protection Agency ("EPA") is authorized under Section 308 of the Clean Water Act ("CWA" or the "Act"), 33 U.S.C. § 1318, to require reports and other information necessary to carry out the purposes of the Act. You should read the Information Requirement carefully as it provides instructions and deadlines for certain information to be provided to EPA.

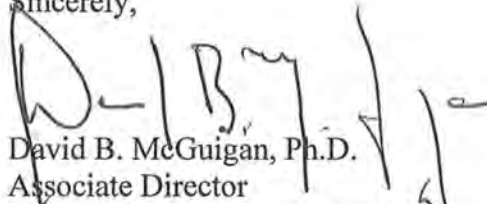
Compliance with this Information Requirement is mandatory. Failure to respond fully and truthfully to the Information Requirement in accordance with deadlines set forth in the Information Requirement, or to adequately justify such failure to respond, can result in enforcement action by EPA pursuant to Section 309 of the Act, 33 U.S.C. § 1319. EPA is authorized to seek the imposition of penalties up to \$20,965 for each day of continued noncompliance with the Information Requirement. Please be further advised that the provision of false, fictitious, or fraudulent statements or representations may subject you to criminal penalties under 18 U.S.C. § 1001.

You may assert a business confidentiality claim covering all or part of the information required herein in the manner described in 40 C.F.R. § 2.203(b). Information covered by such a claim will be disclosed by EPA only to the extent and by means of the procedures set forth in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies the information required herein when it is received, EPA may make the information available to the public without further notice to you.

This Information Requirement is not subject to review by the Office of Management and Budget under the Paperwork Reduction Act of 1980, 44 U.S.C. Chapter 35 (See 5 C.F.R. § 1320.3(c)).

Should you have any questions pertaining to this matter, please contact Mr. Mark Zolandz of my office at (215) 814-2319.

Sincerely,

A handwritten signature in black ink, appearing to read 'D. B. McGuigan', with a stylized flourish at the end.

David B. McGuigan, Ph.D.
Associate Director
Office of NPDES Permits and Enforcement
Water Protection Division

cc: Randy Casey, VA DMME

Enclosure

In The Matter of: :
:
Contura Energy, Inc. :
:
:
:
:
:
:
:
Respondent :
:

INFORMATION REQUIREMENT

Proceeding Under Section 308 of the
Clean Water Act, 33 U.S.C. § 1318

I. STATUTORY AUTHORITY

1. This Information Requirement is issued under the authority vested in the United States Environmental Protection Agency (EPA) by Section 308 of the Clean Water Act (CWA or Act), 33 U.S.C. § 1318. The Administrator of the EPA has delegated this authority to the Regional Administrator of EPA Region III who in turn has delegated it to the Director of the Water Protection Division of EPA Region III who in turn has delegated it to the Associate Director of the Office of National Pollutant Discharge Elimination System (NPDES) Permits and Enforcement. EPA hereby requires Contura Energy, Inc. (Contura) to provide information specified below.

II. STATUTORY AND REGULATORY BACKGROUND

2. EPA is authorized under Section 308 of the CWA, 33 U.S.C. § 1318, to require owners and operators of point sources to establish records and make such reports as may be necessary to carry out the purpose of the CWA, including but not limited to:
 - a. developing or assisting in the development of any effluent limitation, or other limitation, prohibition, effluent standard, pretreatment standard, or standard of performance under the CWA;
 - b. determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance;
 - c. any requirement under Section 308 of the CWA; and,
 - d. carrying out Sections 305, 311, 404, and 504 of the CWA.
3. Failure to respond as directed to a CWA Section 308 requirement is punishable under the civil and criminal provisions of Section 309 of the CWA, which provide for the

assessment of penalties, injunctive relief and imprisonment. Providing misleading or false information may subject you to civil and criminal sanctions. The information you provide may be used by EPA in administrative, civil, or criminal proceedings.

4. You may, if you desire, assert a business confidentiality claim covering all or part of the information required herein in the manner described in 40 C.F.R. Part 2, Subsection B. Information covered by such a claim will be disclosed by EPA only to the extent and by means of the procedures set forth in Subpart B, 40 C.F.R. Part 2. If no claim of confidentiality accompanies the information required herein when it is received by EPA, it may be made available to the public by EPA without further notice. You may not withhold any information from EPA on the grounds that it is confidential business information. This inquiry is not subject to review by the Office of Management and Budget under the Paperwork Reduction Act 44 U.S.C. Chapter 35. *See* C.F.R. Section 1320.3(c).

III. INSTRUCTIONS

5. Provide all documents in your possession which relate to the responses given. With respect to each document, identify the date, author, addressee, current location, and custodian and indicate on each document produced in response to this Information Requirement, or in some other reasonable manner, the number of the question or subpart to which it corresponds.
6. Provide a separate narrative response for each question contained in this Information Requirement and for each subpart of each question. Precede each answer with the corresponding number of the question to which it responds.
7. Provide the name, address, telephone number, and occupation of each person providing responses to any questions contained in this Information Requirement, as well as each person consulted in the preparation of the response on behalf of Respondent, to these demands for information.
8. For each question, identify each document consulted, examined, or referred to in the preparation of the response or that contains information responsive to the questions, and provide a true and correct copy of each document if not provided in response to another specific question.
9. If tabulation is required, provide the required information in tabular form in hard copy and also in tabular form in an electronic spreadsheet file of Microsoft Excel format.
10. To the extent information required herein was previously provided to EPA by the Respondent, there is no need to provide it again, but rather identify the information and the date it was previously provided.

11. If required information or documents are not known or are not available at the time of your response to this Information Requirement, but later become known or available, Respondent must supplement its response to EPA. Moreover, should Respondent find at any time after submission of its response that any portion is or becomes false, incomplete, or misrepresents the facts; Respondent must provide EPA with a corrected response as soon as possible.
12. All submissions provided pursuant to this Information Requirement shall be signed and dated by Respondent to include the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signed _____
Title _____
Date _____

13. Submit a copy of your response to the following individual:

Mr. Mark Zolandz
NPDES Enforcement Branch (3WP42)
Water Protection Division
U.S. Environmental Protection Agency, Region III
1650 Arch Street
Philadelphia, PA 19103-2029

IV. DEFINITIONS

14. The terms "document" and "documents" shall mean any format that records, stores, or presents information, and includes writings, memoranda, records, or information of any kind, formal or informal, whether wholly or partially handwritten or typed, whether in computer format, memory, or storage device, or in hard copy, including any form or format of these types. If in computer format or memory, each such document shall be provided in a translated form useable and readable by EPA, with all necessary documentation and support. All documents in hard copy should also include: (a) a copy of each document which is not an exact duplicate of a document which is provided; (b) each copy which has any writing, notation, or the like on it; c) drafts; (d) attachments to

or enclosures with any document; and (e) every other document referred to or incorporated into each document.

15. The term “identify” with respect to a natural person means to provide that person’s name, address, telephone number, title, and relationship to Respondent. The term “identify” with respect to a business entity means to provide that entity’s name, address, and relationship to the Respondent, and to provide the name, address, telephone number, and title of an individual who can provide information related to, and on behalf of, the entity.
16. The term “Facility” refers to all coal mines or related operations, including without limitation all coal refuse facilities, coal preparation facilities or coal storage or transfer facilities owned or operated by Contura Energy, Inc., or any joint venture or affiliated company including Dickenson-Russell Contura, LLC and Paramount Contura, LLC.
17. The term “SMCRA” refers to the Surface Mining Control and Reclamation Act.

V. REQUEST FOR INFORMATION

Within thirty (30) calendar days of receipt of this Information Requirement, and pursuant to Section 308 of the CWA, 33 U.S.C. § 1318, please submit to EPA the following information:


18. In narrative form, provide a description of the business operations of Contura, including any subsidiaries. In your response include:
 - a. Date and state of Incorporation. If this is a privately held corporation provide information on the timeframe of state operations;
 - b. Years of operation;
 - c. An organization chart that includes the list of officers with titles;
 - d. The location of headquarters operations and locations for business operations and a list of local offices or any subsidiaries;
 - e. The Standard industrial classification code that you operate under;
 - f. Number of employees; and
 - g. Annual sales and revenue from January 2012 for the present.
19. A list of all Facilities in Virginia, including:
 - a. Mine or related operation Name;
 - b. Mine or related operation Location;
 - c. NPDES Permit Number; and
 - d. SMCRA Permit Number.
20. For each Facility identified in response to paragraph 19, provide a table of all hollow fills, whether permitted or unpermitted, with the following information:

- a. Permittee name;
 - b. NPDES permit number;
 - c. SMCRA permit number;
 - d. Outfall number and location including Latitude and Longitude (if the outfall has been deleted from the NPDES permit, provide the historic outfall number and indicate that it has been deleted);
 - e. Receiving stream; and
 - f. Current operational status of the hollow fill, (e.g., active, inactive, phase of bond release, sediment pond removed and NPDES outfall deleted, etc.).
21. For each hollow fill identified in response to paragraph 20, where the sediment pond has been removed and the outfall deleted from an NPDES permit, provide the following:
- a. All documents related to the design and construction of the hollow fill;
 - b. Any Cumulative Hydrologic Impact Assessments.
 - c. All water monitoring data, including but not limited to NPDES effluent monitoring data and SMCRA monitoring data, and any samples taken below the toe of the fill, for a period of one year prior to removal of the outfall to present;
 - d. The permit application to delete the outfall; and
 - e. The date the outfall was removed.
22. For any hollow fill identified in response to paragraph 20 that is not currently being monitored for water quality, beginning 15 days after receipt of this information requirement and continuing for 6 months, conduct daily monitoring for flow and specific conductivity and weekly monitoring for total dissolved solids at a location directly below the toe of the fill. These results, including GPS coordinates of the sampling locations, should be submitted to EPA on a monthly basis.

VI. EFFECTIVE DATE

This INFORMATION REQUIREMENT is effective upon receipt.

Date: 5/24/17



David B. McGuigan, Ph.D.
Associate Director
Office of NPDES Compliance and Enforcement
Water Protection Division

1. Doe Branch Permit (VA)

Joint SMCRA/NPDES permit (1101946/0081946) Renewal Application Number 1009492:

Doe Branch was originally permitted in September of 2005. In 2006, EPA also approved a TMDL for Russell Prater Creek, which would receive some of the drainage from this mine site when it is activated. Total Dissolved Solids was designated as one of the stressors in the TMDL. In 2009, a major revision was submitted to add over 1000 acres of mining area to the permit. DMLR submitted a draft NPDES permit for Doe Branch to EPA in August 2012 and in September 2012 the EPA issued a General Objection to the issuance of the NPDES permit. EPA followed up with a Specific Objection in November of 2012. DMLR responded to all the comments in the Specific Objection and received no response from EPA. DMLR then issued the joint SMCRA/NPDES permit on 11/25/2013. EPA responded with a letter in December 2013 stating that the Specific Objection was still valid and unresolved, meaning that the permit issued by DMLR was not “valid” according to EPA. To this day, EPA still refuses to lift its Specific Objection.

In June 2014, the EPA confirmed that it met with the Sierra Club and the Southern Appalachian Mountain Stewards (SAMS) concerning Doe Branch. Shortly thereafter, SAMS and Sierra Club filed a complaint with OSM, prompting a Ten Day Notice to VA over the Doe Branch permit and TMDL issues. SAMS and Sierra Club also filed comments against renewal of the Doe Branch permit, forcing DMLR to hold hearings over the application and successive drafts of the permit. The latest draft permit was submitted to EPA on 4/27/2017 and there has been no response. EPA’s Region 3 Office has made coal-related permitting nearly impossible. This is approaching 8 years of wrangling with EPA on this permit.

While all this EPA interference was ongoing on the SMCRA/NPDES permit, we were experiencing the same on the CWA 404 permit. We were successful in finally obtaining a 404 permit but due to the EPA interference, it was extremely expensive, costing many times what a typical CWA 404 permit should have cost to obtain and took way too much time to gain approval. It also contains some very difficult requirements that were added by EPA.

2. Permit Shield, Aluminum and Selenium issues in WV:

We do not currently have any permitting actions that are being held up by EPA’s failure to approve these WVDEP requests, but will soon be submitting a request for alternate Selenium limits at our Power Mountain Coal Refuse Disposal Area. There have also been some recent adverse decisions by Judge Chambers in the Southern District of WV where he relied upon the current WV permit shield language. Had EPA approved the WVDEP request, these outcomes might have been different. The hardness-based aluminum standard would help the industry in

general. The current standard is overly protective.

3. Underdrains as NPDES Discharges (EPA's Information Request under Section 308 of the CWA):

On June 1, Contura received a Section 308 Letter from EPA's Region 3 that was signed by Mr. David B. McGuigan, Associate Director, Office of NPDES Permits and Enforcement. This letter requires that Contura provide an enormous amount of information in a very short timeframe. This information is already in the possession of the Virginia Division of Mined Land Reclamation (VDMLR), the agency with SMCRA and CWA primacy in Virginia's coalfields. This information request centers on the apparent EPA belief that underdrains from valley-fills on surface mines become NPDES point source discharges once the ponds that they drain to are removed, and that the underdrains require a new permitting action once the receiving ponds are removed. The ponds are only removed after a permitting action requesting the ponds' removal is submitted, reviewed and approved by VDMLR. This is a novel EPA approach that is supported by the Sierra Club but not supported by the DMLR which regulates the mining operations and must approve the removal of the ponds. In its 40-year plus history DMLR has never regulated underdrains as NPDES discharges and we are not aware of any State that has primacy to regulate coal operations that so regulates underdrains.

We would like to see this request withdrawn or held in abeyance until the DMLR and EPA's Region 3 Associate Director McGuigan have a scheduled conference call to discuss this issue. They have a call scheduled for June 8.

To: Davis, Gail[Davis.Gail@epa.gov]; EPA@BCDTRAVEL.COM[EPA@BCDTRAVEL.COM]; Jackson, Ryan[jackson.ryan@epa.gov]; Willis, Sharnett[Willis.Sharnett@epa.gov]
From: EPA@BCDTRAVEL.COM
Sent: Fri 6/2/2017 4:17:48 PM
Subject: UPDATED 02Jun - Travel Receipt for JACKSON/RYAN T Travel date 07Jun
Travel Receipt Communication Attachment - M2PZWQ - June 7 2017.PDF

TRAVELER NOTICE - Many airlines charge fees for baggage and other services. Amounts vary by airline and are subject to change.

Travelers are responsible for verifying all fees charged by individual carriers.

Please visit the operating carrier website of your ticketed itinerary for applicable fees.

To view your trip via Viewtrip, please click [here](#)

Printer Friendly

Total Amount: 53.24 USD

This ticket information applies to the following trip(s):

Delta Air Lines Flight [redacted] from [redacted] to Rome on June 07

Delta Air Lines Flight [redacted] from Rome to [redacted] on June 13 (Operated By: Alitalia S.P.A)

Delta Air Lines Flight [redacted] from [redacted] on June 16 (Operated By: Endeavor Air Db a Delta Connection)

ElectronicTicket Number: [redacted]

Invoice Number: 000168380

Ticket Amount: 3,377.74 USD

Prior Ticket: [redacted]

Old Ticket Value: 3,458.24 USD

Penalty/Exchange Fee: 0.00 USD

Add/Collect: 0.00 USD

Form of Payment: CA*****5946

Service Fee Number: 8900693781119

Service Fee Amount: 53.24 USD
Form of Payment: CA*****5946

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/2017	FCO	<small>Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F</small>	Confirmed		Economy / X
06/13/2017	FCO	<small>Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F</small>	Confirmed	<small>Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F</small>	Economy / Y
06/16/2017		<small>Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F</small>	Confirmed		Economy / Y

[Add to Calendar](#) [Need Help?](#)

Delta Air Lines Flight Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Economy

[Online check-in](#)

Depart:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

[Weather](#)

Arrive:

Fiumicino, Terminal 3

[Weather](#)

Rome, Italy

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Thursday, June 8 2017

Duration:

8 hour(s) and 45 minute(s) Non-stop

Status:

Confirmed - Delta Air Lines Record Locator: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Meal:

Dinner

Equipment:

Airbus Industrie A330-300

Seat:

38B (Non smoking) Confirmed

Distance:

4263 miles / 6859.167 kilometers

CO2 Emissions:

1,594.36 lbs/724.71 kgs

Remarks:

SEAT ASSIGNMENT CONFIRMED:38B
FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY

PLEASE CHECK WWW.DELTA.COM
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

[Add to Calendar](#) [Need Help?](#)

Delta Air Lines Flight D[REDACTED] Economy

[Online check-in](#)

Depart: Fiumicino, Terminal 1
Rome, Italy

[Weather](#)

Arrive: [REDACTED] Tuesday, June 13 2017

[Weather](#)

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Duration: 9 hour(s) and 35 minute(s) Non-stop
Status: Confirmed - Delta Air Lines Record Locator: [REDACTED]

Meal: Lunch
Equipment: Boeing 777-200/ 200ER
*Operated By: Alitalia
Seat: Assigned at Check-in
Distance: 4263 miles / 6859,167 kilometers
CO2 Emissions: 1,594.36 lbs/724,71 kgs

Remarks: SEAT ASSIGNMENT RESTRICTED TO AIRPORT/ONLINE CHECK-IN.
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

[Add to Calendar](#) [Need Help?](#)

Delta Air Lines Flight [REDACTED] Economy

[Online check-in](#)

Depart:

[Weather](#)

Arrive:

[Weather](#)

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Duration: 1 hour(s) and 47 minute(s) Non-stop
Status: Confirmed - Delta Air Lines Record Locator: [REDACTED]
Equipment: Canadair Regional Jet
*Operated By: Endeavor Air DBA Delta Connection
Seat: 05B (Non smoking) Confirmed
Distance: 227 miles / 365,243 kilometers
CO2 Emissions: 124.85 lbs/56.75 kgs

Remarks: SEAT ASSIGNMENT CONFIRMED: 05B
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

FOR 24/7 TRAVEL ASSISTANCE PLEASE CONTACT
THE BCD TRAVEL TEAM AT 1-866-964-1346
FOR OUTSIDE THE US CALL COLLECT 770-829-2609
FOR THE HEARING IMPAIRED- PLEASE DIAL 711
TO ACCESS RELAY SERVICE- PROVIDE PHONE
NUMBER OF 1-866-964-1346 TO ACCESS TRAVEL
DUE TO RECENT CHANGES IN THE FY15 GOVERNMENT CITY PAIR
PROGRAM/PPP YOUR AIR RESERVATIONS ARE SUBJECT TO

CANCELLATION BY THE AIRLINES IF NOT TICKETED AT LEAST 48 HOURS PRIOR TO SCHEDULED DEPARTURE
PLEASE ENSURE ALL NECESSARY APPROVALS ARE PROCESSED IN ACCORDANCE WITH YOUR AGENCY'S BUSINESS RULES BUT NO LESS THAN 3 BUSINESS DAYS PRIOR TO DEPARTURE TO ENSURE TICKETING. THIS 48 HOUR CANCELLATION RULE DOES NOT APPLY TO INTERNATIONAL RESERVATIONS UNLESS YOUR TRIP HAS DOMESTIC CONNECTIONS ON MORE THAN ONE AIRLINE OR THESE RESERVATIONS REQUIRE SEPARATE AIR TICKETS.

RECONFIRM INTERNATIONAL FLIGHTS 72HRS PRIOR TO TRAVEL
CHECK IN 2 1/2 HOURS PRIOR FOR INTERNATIONAL TRAVEL
A PASSPORT VALID 6 MONTHS BEYOND INTENDED STAY IS REQUIRED FOR THIS ITINERARY
ADVISED OF DOCUMENT REQUIREMENTS FOR THIS ITINERARY
CHECK WWW.CDC.GOV/TRAVEL FOR TRAVEL HEALTH ADVISORIES
PROPER DOCUMENTATION IS REQUIRED FOR ENTRY INTO ARRIVAL COUNTRY
CHECK WWW.DHS.GOV/TRAVEL-ALERTS
FOR COUNTRY TRAVEL ADVISORIES
CONTACT THE DESIGNATED GOVERNMENT AGENCY IN YOUR COUNTRY OF CITIZENSHIP FOR PASSPORT/VISA REQUIREMENTS.
TRAVEL INTO U.S. MAY REQUIRE ESTA AUTHORIZATION. VISIT [HTTPS://ESTA.CBP.DHS.GOV](https://esta.cbp.dhs.gov) FOR DETAILS.
CHECK-IN TIMES ARE 90 MINUTES PRIOR TO DEPARTURE FOR DOMESTIC FLIGHTS OR 120 MINUTES FOR INTERNATIONAL
ELECTRONIC TICKET/S/ WILL BE ISSUED FOR THIS TRIP
AIRPORT FEES MAY BE COLLECTED UPON ARRIVAL OR DEPARTURE.
CHECKED BAGGAGE POLICIES VARY BASED ON CARRIER AND FINAL WITH YOUR TRAVEL CONSULTANT OR THE AIRLINES WEBSITE.

**
**

DESTINATION. FOR THE LATEST INFORMATION PLEASE CHECK

02Jun/11:17AM

TRAVELER NOTICE – Please check with your carrier(s) for travel documents required (Passport, VISA, etc.) and security requirements regarding permitted and prohibited articles and goods related to your travel.

Air	Car	Hotel	Rail	Other
3,377.74 USD				
Vendor	Fare information	Refund restrictions before departure	Change restrictions after ticketing	Ticket information
Air <div> <div>7Jun</div> <div>13Jun</div> <div>16Jun</div> </div>	Total: USD 3,377.74	REFUND RESTRICTIONS MAY APPLY	CHANGE RESTRICTIONS MAY APPLY	
All quotes are provider quotes excluding possible taxes and charges en route. Currency conversions shown in this itinerary receipt are done using the bank rate applicable at the date shown in the header of this document. Please note that some local taxes and charges may be invoiced during your trip and cannot be shown at time of reservation.				

Advice to Passengers

Transportation of Hazardous Materials

Federal law forbids the carriage of hazardous material aboard the aircraft, in your luggage, or on your person. A violation can result in 5 years imprisonment and penalties of \$250,000 or more (49 U.S.C 5124). Hazardous materials include explosives, compressed gases, flammable liquids

and solids, oxidizers, poisons, corrosives and radioactive materials.

Forbidden Dangerous Items Examples:

Paints, lighter fluid, fireworks, tear gases, oxygen bottles and radiopharmaceuticals. There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person. For further information, contact your airline representative.

Note: Spare batteries and fuel cells are not permitted in checked or hold baggage. These items **MUST** be packed in carry-on baggage. If your carry-on bag is gate checked, the spare batteries and fuel cells must be removed and carried in the cabin.

Email generated on 02Jun/4:17 PM UTC

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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Wheeler, Andrew R.
Sent: Tue 6/13/2017 3:25:13 PM
Subject: Washington Coal Club

Would you be willing to speak at a Washington Coal Club lunch, probably in July. Location either on the Hill or at NMA. We can accommodate your schedule but would need to book it three weeks out. Some House members attend, mostly Hill staff and Washington Reps. Thanks for considering.

Andrew R. Wheeler

Principal

andrew.wheeler@faegreBD.com Download vCard

D: +1 202 312 7424 | M: Ex. 5 - Personal Privacy | F: +1 202 312 7460

Faegre Baker Daniels Consulting

1050 K Street NW | Suite 400 | Washington, DC 20001, USA

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Cyber Security Executive Order Implementation
Sent: Thur 6/15/2017 12:05:19 PM
Subject: [SPAM] Register for July 12: The President's Cybersecurity Exec Order (EO) Workshop

**Please Review and Forward to
Your Government Executives, Managers and Staff
Who Play a Part in Agency Cyber Security Management or Implementation**

Potomac Forum Training Workshop
**Implementing the President's
Cybersecurity Executive Order (EO)
Training Workshop**

*A "How To" Workshop to Implement the
Requirements of the EO and its Reporting Requirements*

Date: Wednesday, July 12, 2017

Early Bird Reduced Registration Fee Until June 17th

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Government Speakers:

Dr. Ron Ross

NIST Fellow

**Author of the NIST Risk Management Framework (RMF) and
Numerous NIST Cyber Security Publications**

Jarvis Rodgers

Information Technology Audit Director

Office of Inspector General

Department of Health and Human Services (HHS)

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approved for participation by their Agencies

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Overview:

This workshop will focus on the President's EO on Cybersecurity and discuss its requirements. A key requirement is the implementation of NIST's Cybersecurity Framework (CSF). We will present an understanding of the CSF and NIST's Risk Management Framework (RMF) which is a key component of the CSF. The CSF and RMF are critical for the federal government in its efforts to mitigate risk within enterprise information systems. The workshop will provide detailed guidance on the integration of the CSF and RMF into a holistic Cybersecurity solution. In addition, the workshop will address the EO reporting requirements for the first 90-day report and the other reports identified in the EO.

Hear from industry experts and government officials tasked with implementing robust cybersecurity and risk management strategies along with learning how NIST's CSF and RMF can be effectively implemented to reduce the risk of cyber-attacks. Listen to a government panel of CIOs and CISOs to understand the challenges they are facing on a day-to-day basis and how implementation of NIST's CSF and RMF helps them identify the risks and what it takes to mitigate those risks. Gaining insights from the

panel and peer interactions at the workshop should be invaluable in implementing the President's EO and moving the needle forward in improving federal cybersecurity.

What You Will Learn:

- **The approach used by the NIST RMF**
- **The value of the integration of the NIST RMF with the NIST CSF**
- **Development of agency Risk Management Strategies**
- **Changes in federal information system authorization requirements and guidelines**
- **Guidance into what agencies can expect from the NIST RMF and new CSF processes**
- **Importance of Risk Assessments (RA), Security Control Assessments (SCA), and Security Testing & Evaluation (ST&E)**
- **Security control categorization and how it is used to manage risk**
- **NIST SP 800-53A, Guide for Assessing the Security Controls in Federal Information Systems and Organizations: Building Effective Security Assessment Plans; NIST SP 800-37 Rev. 1 Guide for Applying the Risk Management Framework to Federal Information Systems: A Security Life Cycle Approach and NIST SP 800-39 Managing Information Security Risk**
- **Reporting Requirements for the Executive Order**
- **Best Practices for Responding to the Executive Order**

Why You Should Attend

- **Review the key steps within the NIST RMF and CSF**
- **Obtain practical knowledge of how NIST RMF and CSF are incorporated into information system security**
- **Gain insight into conducting and implementing NIST RMF and CSF in your organization**
- **Collect information on how NIST frameworks can be leveraged to enhance the security of your organization**
- **Learn how risk management and cybersecurity are essential for regulatory compliance**
- **Learn from risk management, security and OIG colleagues in Federal, State and Local Governments**
- **Learn how other Agencies are responding to the EO**

Who Should Attend:

- **CIOs, CISOs and Staff**
- **IT security and risk management practitioners**
- **IGs and Staff**
- **Program Managers responsible for risk management**
- **Government Employees who want to better understand organization risk management**
- **Executives who oversee risk management for the government**
- **All government executives, managers and staff who need to better understand risk management and implementing the President's Executive Order**

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Agency Self Assessments are in to NARA
-- How Can You Improve Your Scores?
Tuesday, June 20, 2017**

- 2. How to Meet the Workforce Requirements of the President's
Executive Order 13781 Training Workshop
What Federal Executives, Managers, and Supervisors Need to Know to
Support the Goals of the Executive Order for Reforming the Federal
Government and Reducing the Federal Civilian Workforce
Wednesday, June 28, 2017**

- 3. Implementing the President's Cybersecurity Executive Order (EO)
Training Workshop
A "How To" Workshop to Implement the Requirements
of the EO and its Reporting Requirements
Wednesday, July 12, 2017**

**All Workshops at the
Willard InterContinental Hotel
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This email was sent to: jackson.ryan@epa.gov

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This email was sent by: **Potomac Forum, Ltd.**
400 North Washington Street, Alexandria, Virginia, 22314, USA

To: Davis, Gail[Davis.Gail@epa.gov]; EPA@BCDTRAVEL.COM[EPA@BCDTRAVEL.COM]; Jackson, Ryan[jackson.ryan@epa.gov]; Willis, Sharnett[Willis.Sharnett@epa.gov]
From: EPA@BCDTRAVEL.COM
Sent: Fri 6/2/2017 4:12:36 PM
Subject: Travel Itinerary for JACKSON / RYAN T

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Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/2017	FCO	Personal Security Ex: 5; Ex: 5C; Ex: 5E; Ex: 5F	Confirmed		Economy / X
06/13/2017	FCO	Personal Security Ex: 5; Ex: 5C; Ex: 5E; Ex: 5F	Confirmed		Economy / Y
06/16/2017		Personal Security Ex: 5; Ex: 5C; Ex: 5E; Ex: 5F	Confirmed		PMEconomy / Y

Delta Air Lines Flight Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Economy

Depart:

Weather

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Arrive:

Weather

Rome, Italy

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Thursday, June 8 2017

Duration: 8 hour(s) and 45 minute(s) Non-stop

Status: Confirmed - Delta Air Lines Record Locator: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Meal: Dinner

Equipment: Airbus Industrie A330-300

Seat: 38B (Non smoking) Confirmed

Distance: 4263 miles / 6859.167 kilometers

CO2 Emissions: 1,594.36 lbs/724.71 kgs

Remarks: SEAT ASSIGNMENT CONFIRMED:38B

Delta Air Lines Flight Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Economy

Depart:

Weather

Fiumicino, Terminal 1

Rome, Italy

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Tuesday, June 13 2017

Arrive:

Weather

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Duration: 9 hour(s) and 35 minute(s) Non-stop

Status: Confirmed - Delta Air Lines Record Locator: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Meal: Lunch

Equipment: Boeing 777-200/ 200ER

*Operated By: Alitalia

Seat: Assigned at Check-in

Distance: 4263 miles / 6859.167 kilometers

CO2 Emissions: 1,594.36 lbs/724.71 kgs

Remarks: SEAT ASSIGNMENT RESTRICTED TO AIRPORT/ONLINE CHECK-IN.

Delta Air Lines Flight XXXXXX Economy

Depart:

Weather

Arrive:

Weather

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Duration: 1 hour(s) and 47 minute(s) Non-stop
Status: Confirmed - Delta Air Lines Record Locator: XXXXXXXXXX
Equipment: Canadair Regional Jet
*Operated By: Endeavor Air Dba Delta Connection
Seat: 05B (Non smoking) Confirmed
Distance: 227 miles / 365.243 kilometers
CO2 Emissions: 124.85 lbs/56.75 kgs
Remarks: SEAT ASSIGNMENT CONFIRMED:05B

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To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Strobel, Kristin
Sent: Tue 6/6/2017 7:05:25 PM
Subject: Request for Meeting-ISRI

Ryan,

It was a pleasure meeting you this past weekend at the celebration for "Fish." I didn't want to talk shop at a social gathering, but did want to follow-up with you regarding some recent conversations I have been having with my friend, Samantha Dravis, regarding our client, ISRI. Please see the email exchange below for more background. I realize the dates of request have passed, but we are happy to re-submit new times.

Long story short, our client is more than happy to meet with Samantha and/or other members of your team, but we would love to have 3-5 minutes with Pruitt stopping in to say "hello." I know this is a special request on our end, but any help would be appreciated. Please let me know if I can provide more background to you or your team.

Thanks,

Kristin

Kristin Strobel
Director of State Affairs
BGR Government Affairs, LLC



The Homer Building
Eleventh Floor South
601 Thirteenth Street, NW
Washington, DC 20005
Direct: (202) 661.6324
Fax: (202) 833-9392
kstrobel@bgrdc.com
www.bgrdc.com

From: Dravis, Samantha [mailto:dravis.samantha@epa.gov]
Sent: Monday, April 24, 2017 11:01 AM
To: Strobel, Kristin <KStrobel@bgrdc.com>
Subject: RE: Request for Meeting-ISRI

Hi Kristin,

I have sent this on to Administrator Pruitt's scheduling team, and I will follow up with them.

From: Strobel, Kristin [mailto:KStrobel@bgrdc.com]
Sent: Monday, April 24, 2017 10:20 AM
To: Dravis, Samantha <dravis.samantha@epa.gov>
Subject: Request for Meeting-ISRI
Importance: High

Sam,

Hope all is well. I just gave you a call, but your voicemail is full ☹. I know things are super busy on your end, but please let me know if you have any updates on the request below.

Have a great Monday,

Kristin

Kristin Strobel
Director of State Affairs
BGR Government Affairs, LLC



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kstrobel@bgrdc.com
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From: Strobel, Kristin
Sent: Monday, April 17, 2017 2:57 PM
To: 'Dravis, Samantha' <dravis.samantha@epa.gov>
Cc: Monroe, Loren <Loren_Monroe@BGRdc.com>
Subject: RE: Request for Meeting-ISRI
Importance: High

Thanks. Samantha.

*The primary purpose of the meeting is to introduce the leadership of **The Institute of Scrap Recycling Industries, Inc. (ISRI)** which represents approximately 1,300 companies in 21 chapters in the U.S. and 34 countries worldwide that process, broker and consume scrap commodities, including metals, paper, plastics, glass, rubber, electronics, and textiles. Generating more than \$105 billion annually in U.S. economic activity, the scrap recycling industry provides nearly half a million Americans with good jobs.*

The U.S. scrap recycling industry's significant contributions to environmental protection, resource conservation, and sustainability are dependent upon government policies that understand and recognize these benefits and that promote their growth. With the industry recycling more than 130 million metric tons of commodity grade materials each year, transforming outdated or obsolete products and materials into useful raw materials needed to produce new products, recyclers offer real solutions for balancing economic growth and environmental stewardship.

Time permitting, potential topics for discussion include:

Recognize Scrap is Not Waste/Recyclables are Not Waste. Persistent misidentification of recyclable materials as solid waste, and even hazardous waste, impedes recycling at the federal, state, and local levels. Preserving the gains made by the industry that scrap is not waste under Subtitle C of Resource Conservation and Recovery Act (RCRA) is critical for the industry.

Reform Citizen Suits Provisions in the Clean Water Act to Prevent Abuse. ISRI seeks modifications to the citizen suit provisions of the Clean Water Act to prevent frivolous and unfounded lawsuits. Over the years, we have witnessed increased abuse of Clean Water Act citizen lawsuits filed for enrichment rather than as the Act original intended. Many organizations have used publicly available databases to obtain information about regulated facilities and threaten to sue them under the Clean Water Act simply to extract sizable financial “donations” and “voluntary” actions from facilities not otherwise required by law to do so. These facilities settle simply to avoid the costs of litigation, while the organizations then use settlement donations to repeat the process on other facilities in a vicious cycle that was not intended by Congress.

Clarify the Regulatory Uncertainty Surrounding Recycled Rubber: The lack of regulatory clarity in the U.S. is causing significant loss of U.S. jobs, while untested imports replace recycled rubber and add to U.S. landfills. EPA acknowledged in 2008 that the Agency did not see any health concerns based on studies already conducted. There is a vast body of science since then that should allow EPA to re-affirm their 2008 conclusion while supporting the long-term studies undertaken by California OEHHA.

Based on anecdotal claims suggesting a possible link between cancer and playing on athletic fields with recycled rubber infill, President Obama ordered a multi-agency Federal study. The federal study was to last one year and industry has cooperated with EPA. However, after 11 months of data collection, EPA has now determined that it needs another two years to complete its work and has asked to extend its study into 2019 to collect more data. As a result of the extended uncertainty, the industry is seeing significant economic and job loss in the industry and, ironically, the use of materials that have other adverse health and environmental impacts.

Support Continuation of a National Mercury Switch Program with Incentives. With the National Vehicle Mercury Switch Recovery Program (NVMSRP) slated to end this year, ISRI encourages consideration of reinstating switch payments and the exploration of available

avenues to keep the program operational into 2018 and beyond. The program's viability is dependent on a number of factors, including EPA's continued participation and whether continuation of the program would carry the same indemnifications that vehicle dismantlers, scrap processors, and others receive for participating in the current program.

If you need additional information or background, please feel free to call or email me.

Thank you,

Kristin

Kristin Strobel
Director of State Affairs
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From: Dravis, Samantha [<mailto:dravis.samantha@epa.gov>]
Sent: Monday, April 17, 2017 8:51 AM
To: Strobel, Kristin <KStrobel@bgrdc.com>
Cc: Monroe, Loren <Loren_Monroe@BGRdc.com>
Subject: RE: Request for Meeting-ISRI

Thanks Kristin. What would be the subject of the meeting?

From: Strobel, Kristin [<mailto:KStrobel@bgrdc.com>]
Sent: Monday, April 17, 2017 7:47 AM
To: Dravis, Samantha <dravis.samantha@epa.gov>
Cc: Monroe, Loren <Loren_Monroe@BGRdc.com>
Subject: Request for Meeting-ISRI
Importance: High

Samantha,

I hope you had a wonderful Easter weekend with your family.

Per our conversation last week, I would like to formally request a meeting with Administrator Pruitt and our client, the **Institute of Scrap Recycling Industries (ISRI)**.

The meeting will include:

- Robin Weiner (ISRI)
- Mark Reiter (ISRI)
- Billy Johnson (ISRI)
- Loren Monroe (BGR Group)
- Kristin Strobel (BGR Group)

If possible, we would request the meeting dates of **May 10th, 11th or 12th** (specific times are whatever works best for the Administrator).

Please let me know if you need additional background information or details for the meeting.

Thank you for your assistance,

Kristin

Kristin Strobel
Director of State Affairs
BGR Government Affairs, LLC



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To: Jackson, Ryan[jackson.ryan@epa.gov]; Greenwalt, Sarah[greenwalt.sarah@epa.gov]; Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
Cc: crichter@thepolicygroup.com[crichter@thepolicygroup.com]; Paul Bredwell[pbredwell@uspoultry.org]
From: Michael Formica
Sent: Fri 6/2/2017 4:10:39 PM
Subject: Livestock Air Emission Reporting
[NASTTPO letter on release reporting 060117-2.pdf](#)
[ATT00001.txt](#)

Ryan, Sarah, Mandy

I wanted to thank you again for your efforts to help address the recent air emission reporting issues facing livestock agriculture and provide a quick update on two items.

First, through the efforts of Christian Richter who represents the US Poultry and Egg Association here in DC, our coalition had been able to engage significantly with representatives of the National Association of SARA Title III Program Officials (NASTTPO), the organization which represents the state and local emergency response authorities who will be receiving the bulk of these reports.

Through these efforts, which we discussed with Sarah and Mandy when we met last month, NASTTPO's President Tim Gablehouse has provided us with the attached letter to Administrator Pruitt that lays out NASTTPO's evolved understanding on the usefulness of livestock air emission reporting from where they stood back in 2008 when the Bush Administration originally crafted the CERCLA reporting exemption that was at issue in the D.C. Circuit decision. Christian had indicated to Mr Gablehouse that we would pass the letter along to Administrator Pruitt on his behalf, which we are now doing by way of this email.

Second, I wanted to let you know that NPPC and US Poultry & Egg Association will be filing a motion with the D.C. Circuit this afternoon requesting a rehearing of the underlying case.

Thanks again for your attention to this matter. As always, if you have any questions please don't hesitate to contact me.

Michael C. Formica
National Pork Producers Council

Ex. 6 - Personal Privacy

Sent from my SwinePhone



National Association of SARA Title III Program Officials

Concerned with the Emergency Planning and Community Right-to-Know Act

June 1, 2017

The Honorable Scott Pruitt
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Mail Code: 1101A
Washington, DC 20460

Re: CAFOs and Emergency Release Reporting

Dear Administrator Pruitt:

I am writing on behalf of the National Association of SARA Title III Program Officials (NASTTPO), which is made up of members and staff of State Emergency Response Commissions (SERCs), Tribal Emergency Response Commissions (TERCS), Local Emergency Planning Committees (LEPCs), various federal, state and local agencies, private industry and the vast number of volunteers that perform emergency planning and emergency response activities for their communities. Our membership is dedicated to working together with regulated facilities, transportation entities and communities at large to improve community preparedness for emergency events including hazardous materials releases.

NASTTPO over the past several years has had the opportunity to work with various industry groups on emergency preparedness related rulemaking programs at EPA. These experiences have taught us that the most important thing to LEPCs and first responders is not detailed regulatory requirements for a facility's relationship to these groups, but rather the simple act of open dialog and coordination. Following the DC Circuit decision in *Waterkeeper Alliance v. EPA*, we have had meaningful and encouraging discussions with the U.S. Poultry and Egg Association along these lines. NASTTPO believes that open dialog and coordination can be more effective than release reporting for farms that do not handle quantities of EPCRA EHS chemicals but are nevertheless expected to report regarding animal manure management.

We have had experience with EPCRA emergency release reports as well as CERCLA continuous release reports from farms primarily regarding ammonia from animal manure management. These reports are of no particular value to LEPCs and first responders and they are generally ignored because they do not relate to any particular event. (This should be contrasted to the few farms that utilize gas chlorine for water treatment where emergency release reports are useful because they are event specific.)

LEPCs and first responders do not need more generic data. They need information that is locally relevant and upon which they can act. This goal is best obtained by a program that promotes coordination between the regulated facilities and these local groups. Recent discussions suggest that such a program involving farms may be achievable.

We are in favor of reducing regulatory burdens if coordination on the information needs of LEPCs and first responders occurs. The information we want from farms is community-specific. Only the LEPC and local first responders can determine what information they need from a farm as part of their emergency planning process. What we really need is coordination between the farm and local responders and LEPCs. We want them to talk to each other.

Thank you.



Timothy R Gablehouse

President

410 17th St, Ste 275

Denver CO 80202

(303) 572-0050

To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Michael Catanzaro[Ex. 6 - Personal Privacy]
From: Marc Himmelstein
Sent: Tue 6/6/2017 6:01:16 PM
Subject: Uinta Basin

We need your help.

The Uinta Basin in Northeast Utah (Rob Bishop's district) is going to be listed as an ozone non-attainment area later this year. It is a prolific oil and gas producing area that encompasses state, tribal and federal lands. The ozone issues are complicated-winter not summer time issues. The area has been studied by Utah State University funded by the state, EPA and industry-no obvious solutions have been identified, though Region 8 puts much of the blame on industry. The Governor has for years challenged the Region to demonstrate a cause and affect. Mike can certainly describe for you his wars with the Region staff. The state, tribes and industry are trying to find solutions but the Obama Administration exacerbated the the problems when it issued it's Federal Implementation Plan for True Minor Sources on Indian Country last June. In spite of numerous comments urging the inclusion of a traditional streamlined permitting approach for new minor sources in non-attainment areas, they not only refused but added language making such permits more difficult. We are left with a cumbersome site specific permit process which Regional staff has said they are not staffed to do. Additionally, they have interpreted the words in the FIP "cause or contribute" to mean no new permits for sources that have any emissions. This is true even though production is in a decline and no new drilling has occurred-though several companies have proposed to drill new wells this fall, if permits were forthcoming. This virtual zero new permit approach will have devastating impacts on the tribes and the local communities.

We have several ideas which we would like to discuss with you and your staff. We believe that we would have support from the Governor and the tribes as well.

We ask for time to meet with you and your staff to discuss these ideas. I will bring several companies including Newfield and QEP

Appreciate your help

Marc

Sent from my iPad

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Geoffrey Moody
Sent: Tue 6/6/2017 5:55:55 PM
Subject: AFPM meeting

Ryan, do you have 5 minutes to talk this afternoon about next week's meeting?

Thanks,

Geoff Moody
Vice President
Government Relations

American
Fuel & Petrochemical
Manufacturers
1667 K Street NW
Suite 700
Washington, DC 20006
202.457.0480 office
202.552.8489 direct
202.457.0486 fax

gmoody@afpm.org

Learn more about AFPM at afpm.org

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: INFO SGI
Sent: Fri 6/2/2017 3:02:34 PM
Subject: 3rd Quarter

Good Morning Ryan,

I contacted you about a month ago to introduce you to Salmon Group, Inc. With the third quarter of the fiscal year up on us, I would like to take the time to remind you of Salmon Group, Inc.'s qualifications and the services we provide.

We are a SBA 8 (a) Certified, Service Disabled Veteran owned company with over 24 years of experience. We are also GSA Schedule 70 holders with a Top-Secret Clearance.

We provide customized, consultative solutions and qualified individuals to suit a variety of Program/Project Management, Acquisition Support, Financial Management, Call Center Support, IT Support, Copier/Computer Maintenance and Sales, Research & Development, and Administrative Support needs. The individuals who form our executive management team have over 40 years of combined experience managing contract initiatives.

I have included a copy of our [corporate overview](#) with hopes of scheduling an appointment with you to further discuss how Salmon Group, Inc. can help you integrate a variety of functions to create effective customized solutions in a cost-efficient manner.

I hope to hear from you soon.

Respectfully,

Keith Salmon

Email: Keith@Salmongroupinc.com

Web: www.salmongroupinc.com

Phone: (240) 461-4458

To: Myron Ebell[Myron.Ebell@cei.org]
From: Myron Ebell
Sent: Mon 6/5/2017 4:41:55 PM
Subject: Cooler Heads Coalition reminder: next meeting 12th June at 3 PM at CEI

The next meeting of the Cooler Heads Coalition will be on Monday, **12th June**, beginning at **3 PM** at CEI, 1310 L Street, N. W., Seventh Floor.

For those of you who missed it, here is Holman Jenkins's column from Saturday's WSJ.

- [Opinion](#)
- [Business World](#)

Trump Skips Climate Church

Paris exists to provide an imprimatur to what politicians would do anyway.

Opinion Journal: The Paris Climate Con

Opinion Journal Video: Business World Columnist Holman Jenkins Jr. on why the pact is mainly about subsidies, not environmental progress. Photo credit: Getty Images.



By Holman W. Jenkins, Jr.

Updated June 2, 2017 6:47 p.m. ET

932 COMMENTS

The business case for the Paris agreement has nothing to do with climate change. It goes like this: It is better to be part of any confab than outside of it. Like saluting the flag or bowing your head in church, there is no cost to being insincere, but there is a cost to not going along.

Let us understand something: 195 countries will not be dragged kicking and screaming to sign any agreement that imposes a cost on them. Such deals exist only because they provide an international imprimatur to what politicians were going to do anyway.

The oil countries like Saudi Arabia and Norway signed. They plan to keep producing oil. India and China plan to grow energy consumption until it is similar to the per capita consumption of the developed countries, at which point it will level off.

The U.S. and Europe intend to keep subsidizing green energy as long as domestic voters give them permission to do so, because the whole point of being in office is to redirect resources to interest groups best able to reward politicians for doling out the goodies.

The Paris countries agreed to meet certain emissions targets, and claimed an intent to hold a planetary temperature increase to less than 2 degrees Celsius.

Not only are the emission targets unenforceable, they have no intelligible relation to the temperature goal according to the very iffy science. By the shot-in-the-dark estimates of the Intergovernmental Panel on Climate Change, it's even possible the rest of the century will bring little warming anyway.

And that's good. Because the unenforceable cuts agreed to in Paris would be a rounding error even if carried out.

In the 30 years since global warming became a daily concern of the newspapers, one lesson has been reliably demonstrated for policy participants: There is no appetite in the body politic for the kinds of energy taxes and prohibitions needed to make a meaningful change in atmospheric CO₂.

We won't dwell on the media hysteria since the Trump decision, or why many of you, dear readers, in defiance of your own reason, will participate in the hysteria even when you know better. Human beings are social animals. When a mob is forming, we experience high anxiety if we're not part of it.

Agreements like Paris arguably aim at the wrong target anyway. Only when technology can meet mankind's energy demand at competitive cost will low-carbon energy prevail. Governments would be wise to invest in basic energy research rather than throwing money at energy technologies that are viable only as long as the subsidies keep flowing. But the latter is what brings in the political bacon.

Oh well. Hypocrisy is the universal solvent of social relations. This also explains the other big climate story of the day, which reporters have given themselves hypoxia trying to inflate the significance of. We're referring to the vote by 62% of Exxon shareholders, led by giant funds Vanguard, Fidelity and BlackRock, to ask the company to explain how the Paris temperature target would affect its business.

For 30 years there has been push-and-pull in politics over climate change. During every nanosecond of that time, at least while markets were open, investors were repricing energy shares in light of the possibility of climate change legislation.

Exxon has nothing new or useful to tell investors in this regard. Would a carbon tax be good for bad for the company? It would accelerate the displacement of coal by natural gas, which Exxon produces. Is an electric-car battery in the offing that would go 300 miles and be rechargeable in a five-minute stop at a charging station? Probably not. In which case, even a sizable carbon tax would be unlikely to make much dent in the 8% of global emissions caused by passenger cars. Americans bought 143 billion gallons of gas last year when the price was \$2.25; they bought 133 billion gallons in 2012 when the price was \$3.64.

"Our patience is not infinite," huffed a statement by BlackRock, the \$5.4 trillion Wall Street fund, as it voted for Exxon's climate penance.

This gesture, of surpassing meaninglessness, is a case of one prominent institution trying to buff up its reputation for church attendance at the expense of another.

And yet, regardless of Mr. Trump's Paris decision, only one large national economy has been reporting sizable emissions declines, thanks to fracking. The same economy may soon also be able to take credit for slowing China's prodigious emissions growth thanks to natural gas exports to displace Chinese coal. That country is the U.S. under the unthinkable monster Donald Trump. Whatever evolution toward a lower-carbon energy system takes place in the future, it will also certainly be driven overwhelmingly by technology and markets, not policy.

Appeared in the June 3, 2017, print edition. <https://www.wsj.com/articles/trump-skips-climate-church-1496431295?tesla=y>

Myron Ebell

Director, Center for Energy and Environment

Competitive Enterprise Institute

1310 L Street, N. W., Seventh Floor

Washington, DC 20005, USA

Tel direct: (202) 331-2256

Tel mobile: Ex. 6 - Personal Privacy

E-mail: Myron.Ebell@cei.org

Stop continental drift!

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Doug Ericksen
Sent: Tue 6/6/2017 5:16:55 PM
Subject: Sen. Ericksen Fwd: air permit delegation from EPA

Ryan,

I received this email from our Energy Facility Site Evaluation Committee (EFSEC) regarding EPA delegating approval to issue air permits. Bill Lynch is the Director of EFSEC.

Of interest is the last line of the first paragraph. How can region 10 have 600+ employees and not enough manpower to issue a permit in a timely fashion?

Hope all is well in DC. Saw the Administrator on Fox News last night and thought he did a good job.

Doug Ericksen

From: Lynch, Bill (UTC) [mailto:bilynych@utc.wa.gov]
Sent: Tuesday, June 6, 2017 9:33 AM
To: Ericksen, Sen. Doug <Doug.Ericksen@leg.wa.gov>
Subject: air permit delegation from EPA

Hi Senator Ericksen.

I believe you have seen a copy of the press release we issued yesterday about getting EPA approval to issue air permits. I just wanted to send a note to say thank you for being the prime sponsor of SB 5310, which passed during a special session in 2015. That bill updated EFSEC's enforcement authority, which was needed before EPA could delegate air permitting authority to us. Now that EPA has delegated us this authority by approving our state implementation plan (SIP), it means Grays Harbor Energy can get an air permit they have been waiting on from EPA for about 8 years. We expect that they will get a request for the air permit later in the summer or in early fall. It shouldn't take longer than a few months to turn it around. Other projects that come in the door in the future will also benefit from not having EPA issue the permits. EPA just doesn't have permit writers available.

We continue to make progress on all our other fronts.

Hope your summer is going well.

Bill

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Dimitri.Karakitsos@hklaw.com
Sent: Fri 6/2/2017 2:19:02 PM
Subject: Mark Vergnano Letters to President Trump and EPA Administrator Scott Pruitt
[MPV Letter to President Trump \(June 1, 2017\).pdf](#)
[MPV Letter to Pruitt EPA \(May 31, 2017\).pdf](#)

Ryan,

Wanted to make sure you had copies of both these letters .

Happy Friday!

NOTE: This e-mail is from a law firm, Holland & Knight LLP ("H&K"), and is intended solely for the use of the individual(s) to whom it is addressed. If you believe you received this e-mail in error, please notify the sender immediately, delete the e-mail from your computer and do not copy or disclose it to anyone else. If you are not an existing client of H&K, do not construe anything in this e-mail to make you a client unless it contains a specific statement to that effect and do not disclose anything to H&K in reply that you expect it to hold in confidence. If you properly received this e-mail as a client, co-counsel or retained expert of H&K, you should maintain its contents in confidence in order to preserve the attorney-client or work product privilege that may be available to protect confidentiality.

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: DWSschnare
Sent: Sat 6/10/2017 12:07:56 AM
Subject: Re: POSTPONED: EPA Scientific Integrity Stakeholder Meeting

Thanks. Helps.
d

Sent from my iPad

On Jun 9, 2017, at 6:59 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Grifo is sick and has been for weeks. We have industry, ngo right and left, and state rsyps.
We'll reschedule. It doesn't look bad and people can think whatever they want.

Ryan Jackson
Chief of Staff
U.S. EPA
Ex. 6 - Personal Privacy

On Jun 9, 2017, at 2:32 PM, DWSschnare Ex. 6 - Personal Privacy wrote:

This looks very ugly. I don't care to discuss further through email. We might chat very briefly.
d

From: Scientific Integrity <Scientific_Integrity@epa.gov>
Date: June 9, 2017 at 2:02:00 PM EDT
Subject: POSTPONED: EPA Scientific Integrity Stakeholder Meeting

Sent on behalf of Francesca T. Grifo, EPA Scientific Integrity Official

Dear All,

*The EPA Scientific Integrity Annual Stakeholder Meeting that was scheduled for June 14, 2017, has been **postponed**. Dr. Grifo is unable to host the*

meeting as scheduled. The stakeholder meeting will be rescheduled as soon as possible. Once we have a new date, we will send an invitation to you for the rescheduled meeting.

Thank you for your interest in EPA's Scientific Integrity Program.

To: Davis, Gail[Davis.Gail@epa.gov]; EPA@BCDTRAVEL.COM[EPA@BCDTRAVEL.COM];
Jackson, Ryan[jackson.ryan@epa.gov]; Willis, Sharnett[Willis.Sharnett@epa.gov]
From: EPA@BCDTRAVEL.COM
Sent: Tue 6/6/2017 5:16:43 PM
Subject: Travel Receipt for JACKSON/Ryan T Travel date 07Jun
Travel Receipt Communication Attachment - M2PZWQ - June 7 2017.PDF

TRAVELER NOTICE - Many airlines charge fees for baggage and other services. Amounts vary by airline and are subject to change.

Travelers are responsible for verifying all fees charged by individual carriers.

Please visit the operating carrier website of your ticketed itinerary for applicable fees.

To view your trip via Viewtrip, please click [here](#)

Printer Friendly

Total Amount: 1,333.10 USD

This ticket information applies to the following trip(s):

Emirates Flight 205 from Milan to New York NY on June 11

ElectronicTicket Number: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Invoice Number: 000168610

Ticket Amount: 1,116.66 USD

Form of Payment: CA*****5946

Service Fee Number: 8900693781334

Service Fee Amount: 53.24 USD

Form of Payment: CA*****5946

This ticket information applies to the following trip(s):

Jetblue Flight [REDACTED] from [REDACTED] on June 11

Electronic Ticket Number: [REDACTED]

Invoice Number: 000168611

Ticket Amount: 163.20 USD

Form of Payment: CA*****5946

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/201	[REDACTED]	[REDACTED]	Confirmed	[REDACTED]	Economy / Y
06/07/201	[REDACTED]	FCO [REDACTED]	Confirmed	[REDACTED]	Economy / X
06/11/201	MXP-	[REDACTED]	Confirmed	[REDACTED]	Economy / Y
06/11/201	[REDACTED]	[REDACTED]	Confirmed	[REDACTED]	Economy / Y

[Add to Calendar](#) [Need Help?](#)

Delta Air Lines Flight [REDACTED] Economy

[Online check-in](#)

Depart:

[Weather](#)

Arrive:

[REDACTED]
Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

[Weather](#)

Duration: 1 hour(s) and 17 minute(s) Non-stop
Status: Confirmed - Delta Air Lines Record Locator: [REDACTED]
Equipment: Canadair Regional Jet 900
*Operated By: Endeavor Air Dba Delta Connection
Seat: 10D (Non smoking, Window) Confirmed
Distance: 212 miles / 341,106 kilometers

CO2 Emissions:
Remarks:

NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED
FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY
PLEASE CHECK WWW.DELTA.COM

Delta Air Lines Flight: Economy

[Online check-in](#)

Depart:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

[Weather](#)

Arrive:

Fiumicino, Terminal 3
Rome, Italy
Thursday, June 8 2017

[Weather](#)

Duration:

8 hour(s) and 45 minute(s) Non-stop

Total duration:

13 hour(s) and 40 minute(s) including layover(s)

Status:

Confirmed - Delta Air Lines Record Locator:

Meal:

Dinner

Equipment:

Airbus Industrie A330-300

Seat:

38B (Non smoking) Confirmed

Distance:

4263 miles / 6859.167 kilometers

CO2 Emissions:

1,594.36 lbs/724.71 kgs

Remarks:

SEAT ASSIGNMENT CONFIRMED:38B
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

[Add to Calendar](#) [Need Help?](#)

Emirates Flight: Economy

[Online check-in](#)

Depart:

Malpensa, Terminal 1
Milan, Italy

[Weather](#)

Arrive:

Sunday, June 11 2017

[Weather](#)

Personal Security Ex. 8; Ex. 7C; Ex. 7E; Ex. 7F

Duration:

8 hour(s) and 50 minute(s) Non-stop

Status:

Confirmed - Emirates Record Locator:

Meal:

Meal

Equipment:

Airbus Industrie A380-800 Passenger

Seat:

Assigned at Check-in

Distance:

3962 miles / 6407.038 kilometers

CO2 Emissions:

1,489.27 lbs/676.94 kgs

Remarks:

NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED
FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY
PLEASE CHECK WWW.EMIRATES.COM

Jetblue Flight: Economy

[Online check-in](#)

Depart:

Arrive:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Weather

Duration: 1 hour(s) and 27 minute(s) Non-stop
Total duration: 13 hour(s) and 12 minute(s) including layover(s)
Status: Confirmed - Jetblue Record Locator
Equipment: Embraer 190
Seat: 10C (Non smoking, Aisle) Confirmed
Distance: 227 miles / 365.243 kilometers
CO2 Emissions: 124.85 lbs/56.75 kgs
Remarks: NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED
FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY,
PLEASE CHECK WWW.JETBLUE.COM

FOR 24/7 TRAVEL ASSISTANCE PLEASE CONTACT
THE BCD TRAVEL TEAM AT 1-866-964-1346
FOR OUTSIDE THE US CALL COLLECT 770-829-2609
FOR THE HEARING IMPAIRED- PLEASE DIAL 711
TO ACCESS RELAY SERVICE- PROVIDE PHONE
NUMBER OF 1-866-964-1346 TO ACCESS TRAVEL
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PROGRAM/PPP YOUR AIR RESERVATIONS ARE SUBJECT TO
CANCELLATION BY THE AIRLINES IF NOT TICKETED AT LEAST
48 HOURS PRIOR TO SCHEDULED DEPARTURE
PLEASE ENSURE ALL NECESSARY APPROVALS ARE PROCESSED IN
ACCORDANCE WITH YOUR AGENCY'S BUSINESS RULES BUT NO LESS
THAN 3 BUSINESS DAYS PRIOR TO DEPARTURE TO ENSURE TICKETING.
THIS 48 HOUR CANCELLATION RULE DOES NOT APPLY TO
INTERNATIONAL RESERVATIONS UNLESS YOUR TRIP HAS DOMESTIC
CONNECTIONS ON MORE THAN ONE AIRLINE OR THESE
RESERVATIONS REQUIRE SEPARATE AIR TICKETS.

RECONFIRM INTERNATIONAL FLIGHTS 72HRS PRIOR TO TRAVEL
CHECK IN 2 1/2 HOURS PRIOR FOR INTERNATIONAL TRAVEL
A PASSPORT VALID 6 MONTHS BEYOND INTENDED STAY
IS REQUIRED FOR THIS ITINERARY
ADVISED OF DOCUMENT REQUIREMENTS FOR THIS ITINERARY
CHECK WWW.CDC.GOV/TRAVEL FOR TRAVEL HEALTH ADVISORIES
PROPER DOCUMENTATION IS REQUIRED FOR ENTRY INTO
ARRIVAL COUNTRY
CHECK WWW.DHS.GOV/TRAVEL-ALERTS
FOR COUNTRY TRAVEL ADVISORIES
CONTACT THE DESIGNATED GOVERNMENT AGENCY IN YOUR
COUNTRY OF CITIZENSHIP FOR PASSPORT/VISA REQUIREMENTS.
TRAVEL INTO U.S. MAY REQUIRE ESTA AUTHORIZATION.
VISIT [HTTPS://ESTA.CBP.DHS.GOV](https://esta.cbp.dhs.gov) FOR DETAILS.
CHECK-IN TIMES ARE 90 MINUTES PRIOR TO DEPARTURE
FOR DOMESTIC FLIGHTS OR 120 MINUTES FOR INTERNATIONAL
ELECTRONIC TICKET/S/ WILL BE ISSUED FOR THIS TRIP
AIRPORT FEES MAY BE COLLECTED UPON ARRIVAL
OR DEPARTURE.
CHECKED BAGGAGE POLICIES VARY BASED ON CARRIER AND FINAL
WITH YOUR TRAVEL CONSULTANT OR THE AIRLINES WEBSITE.

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PLEASE PROVIDE JETBLUE AIRWAYS FREQUENT FLYER NBR AT TIME OF CHECK IN
JETBLUE TICKETS ARE NOT ACCEPTED BY OTHER AIRLINES
**
DESTINATION. FOR THE LATEST INFORMATION PLEASE CHECK

06Jun/12:16PM

TRAVELER NOTICE – Please check with your carrier(s) for travel documents required (Passport, VISA, etc.) and security requirements regarding permitted and prohibited articles and goods related to your travel.

Air	Car	Hotel	Rail	Other
1,279.86 USD				
Vendor	Fare information	Refund restrictions before departure	Change restrictions after ticketing	Ticket information
Air <small>PERMANENTLY CANCELLED</small>	Total: USD 1,116.66	REFUND RESTRICTIONS MAY APPLY	CHANGE RESTRICTIONS MAY APPLY	
Air <small>PERMANENTLY CANCELLED</small>	Total: USD 163.20	REFUND RESTRICTIONS MAY APPLY	CHANGE RESTRICTIONS MAY APPLY	
All quotes are provider quotes excluding possible taxes and charges en route. Currency conversions shown in this itinerary receipt are done using the bank rate applicable at the date shown in the header of this document. Please note that some local taxes and charges may be invoiced during your trip and cannot be shown at time of reservation.				

Advice to Passengers

Transportation of Hazardous Materials

Federal law forbids the carriage of hazardous material aboard the aircraft, in your luggage, or on your person. A violation can result in 5 years imprisonment and penalties of \$250,000 or more (49 U.S.C 5124). Hazardous materials include explosives, compressed gases, flammable liquids and solids, oxidizers, poisons, corrosives and radioactive materials.

Forbidden Dangerous Items Examples:

Paints, lighter fluid, fireworks, tear gases, oxygen bottles and radiopharmaceuticals. There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person. For further information, contact your airline representative.

Note: Spare batteries and fuel cells are not permitted in checked or hold baggage. These items MUST be packed in carry-on baggage. If your carry-on bag is gate checked, the spare batteries and fuel cells must be removed and carried in the cabin.

Email generated on 06Jun/5:16 PM UTC

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TRAVELER NOTICE - Many airlines charge fees for baggage and other services. Amounts vary by airline and are subject to change.

Travelers are responsible for verifying all fees charged by individual carriers.

Please visit the operating carrier website of your ticketed itinerary for applicable fees.

To view your trip via Viewtrip, please click [here](#)

Printer Friendly

Ticket Receipt

Total Amount: 1,333.10 USD

This ticket information applies to the following trip(s):

Emirates Flight from Milan to on June 11

ElectronicTicket Number:

Invoice Number: 000168610

Ticket Amount: 1,116.66 USD

Form of Payment: CA*****5946

Service Fee Number: 8900693781334

Service Fee Amount: 53.24 USD

Form of Payment: CA*****5946

This ticket information applies to the following trip(s):

Jetblue Flight from on June 11

ElectronicTicket Number:

Invoice Number: 000168611

Ticket Amount: 163.20 USD

Form of Payment: CA*****5946

Travel Summary – Agency Record Locator

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/2017	<input type="text"/>	<input type="text"/>	Confirmed	<input type="text"/>	Economy / Y
06/07/2017	<input type="text"/>	FCO	Confirmed	<input type="text"/>	Economy / X
06/11/2017	<input type="text"/>	MXF	Confirmed	<input type="text"/>	Economy / Y
06/11/2017	<input type="text"/>	<input type="text"/>	Confirmed	<input type="text"/>	Economy / Y

AIR - Wednesday, June 7 2017 - Agency Record Locator		Add to Calendar	Need Help?
Delta Air Lines Flight	Economy	Online check-in	
Depart:			
Arrive:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		
Duration:	1 hour(s) and 17 minute(s) Non-stop		
Status:	Confirmed - Delta Air Lines Record Locator		
Equipment:	Canadair Regional Jet 900		
*Operated By:	Endeavor Air DbA Delta Connection		
Seat:	10D (Non smoking, Window) Confirmed		
Distance:	212 miles / 341.108 kilometers		
CO2 Emissions:	116.6 lbs/53 kgs		
Remarks:	NOFREQUENTFLYERINYOURPROFILEFORCARRIERBOOKED FORUPDATETRAVELINFORMATIONONAIRLINE CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY. PLEASECHECKWWW.DELTA.COM		

AIR - Wednesday, June 7 2017 - Agency Record Locator		Add to Calendar	Need Help?
Delta Air Lines Flight	Economy	Online check-in	
Depart:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		
Arrive:	Fiumicino, Terminal 3 Rome, Italy Thursday, June 8 2017		
Duration:	8 hour(s) and 45 minute(s) Non-stop		
Total duration:	13 hour(s) and 40 minute(s) including layover(s)		
Status:	Confirmed - Delta Air Lines Record Locator		
Meal:	Dinner		
Equipment:	Airbus Industrie A330-300		
Seat:	38B (Non smoking) Confirmed		
Distance:	4263 miles / 6859.167 kilometers		
CO2 Emissions:	1,594.36 lbs/724.71 kgs		
Remarks:	SEATASSIGNMENTCONFIRMED:38B NOFREQUENTFLYERINYOURPROFILEFORCARRIERBOOKED		

AIR - Sunday, June 11 2017 - Agency Record Locator		Add to Calendar	Need Help?
Emirates Flight EK205	Economy	Online check-in	
Depart:	Malpensa, Terminal 1 Milan, Italy Sunday, June 11 2017		
Arrive:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F		
Duration:	8 hour(s) and 50 minute(s) Non-stop		
Status:	Confirmed - Emirates Record Locator		
Meal:	Meal		
Equipment:	Airbus Industrie A380-800 Passenger		
Seat:	Assigned at Check-in		
Distance:	3982 miles / 6407.038 kilometers		
CO2 Emissions:	1,489.27 lbs/676.94 kgs		
Remarks:	NOFREQUENTFLYERINYOURPROFILEFORCARRIERBOOKED FORUPDATETRAVELINFORMATIONONAIRLINE CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY. PLEASECHECKWWW.EMIRATES.COM		

AIR - Sunday, June 11 2017 - Agency Record Locator		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F
Jetblue Flight	Economy	Online check-in
Depart:		
Arrive:	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	
Duration:	1 hour(s) and 27 minute(s) Non-stop	
Total duration:	13 hour(s) and 12 minute(s) including layover(s)	
Status:	Confirmed - Jetblue Record Locator	
Equipment:	Embraer 190	
Seat:	10C (Non smoking, Aisle) Confirmed	
Distance:	227 miles / 365.243 kilometers	
CO2 Emissions:	124.85 lbs/56.75 kgs	
Remarks:	NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY PLEASE CHECK WWW.JETBLUE.COM	

Remarks

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FOR OUTSIDE THE US CALL COLLECT 770-829-2609
FOR THE HEARING IMPAIRED PLEASE DIAL 711
TO ACCESS RELAY SERVICE PROVIDE PHONE
NUMBER OF 1-866-964-1346 TO ACCESS TRAVEL
DUE TO RECENT CHANGES IN THE FY15 GOVERNMENT CITYPAIR
PROGRAM/CPY OUR AIR RESERVATIONS ARE SUBJECT TO
CANCELLATION BY THE AIRLINES IF NOT TICKETED AT LEAST
48 HOURS PRIOR TO SCHEDULED DEPARTURE
PLEASE ENSURE ALL NECESSARY APPROVALS ARE PROCESSED IN
ACCORDANCE WITH YOUR AGENCY'S BUSINESS RULES BUT NO LESS
THAN 3 BUSINESS DAYS PRIOR TO DEPARTURE TO ENSURE TICKETING.
THIS 48 HOUR CANCELLATION RULE DOES NOT APPLY TO
INTERNATIONAL RESERVATIONS UNLESS YOUR TRIP HAS DOMESTIC
CONNECTIONS OR MORE THAN ONE AIRLINE OR THESE
RESERVATIONS REQUIRE SEPARATE AIR TICKETS.

RECONFIRM INTERNATIONAL FLIGHTS 72 HRS PRIOR TO TRAVEL
CHECK IN 2 1/2 HOURS PRIOR FOR INTERNATIONAL TRAVEL
A PASSPORT VALID 6 MONTHS BEYOND INTENDED STAY
IS REQUIRED FOR THIS ITINERARY
ADVISED OF DOCUMENT REQUIREMENTS FOR THIS ITINERARY
CHECK WWW.CDC.GOV/TRAVEL FOR TRAVEL HEALTH ADVISORIES
PROPER DOCUMENTATION IS REQUIRED FOR ENTRY INTO
ARRIVAL COUNTRY
CHECK WWW.DHS.GOV/TRAVEL-ALERTS
FOR COUNTRY TRAVEL ADVISORIES
CONTACT THE DESIGNATED GOVERNMENT AGENCY IN YOUR
COUNTRY OF CITIZENSHIP FOR PASSPORT/VISA REQUIREMENTS.
TRAVEL INTO U.S. MAY REQUIRE ESTA AUTHORIZATION.
VISIT [HTTPS://ESTA.CBP.DHS.GOV](https://esta.cbp.dhs.gov) FOR DETAILS.
CHECK-IN TIMES ARE 90 MINUTES PRIOR TO DEPARTURE
FOR DOMESTIC FLIGHTS OR 120 MINUTES FOR INTERNATIONAL
ELECTRONIC TICKETS WILL BE ISSUED FOR THIS TRIP
AIRPORT FEES MAY BE COLLECTED UPON ARRIVAL
OR DEPARTURE.
CHECKED BAGGAGE POLICIES VARY BASED ON CARRIER AND FINAL
WITH YOUR TRAVEL CONSULTANT OR THE AIRLINE'S WEBSITE.
**
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JETBLUE TICKETS ARE NOT ACCEPTED BY OTHER AIRLINES
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06 Jun/12:16 PM

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Estimated trip total				1,279.86 USD
Air	Car	Hotel	Rail	Other
1,279.86 USD				
Fare details: Ticketed				
Vendor	Fare information	Refund restrictions before departure	Change restrictions after ticketing	Ticket information
Air <small>Personal Security Ex. 31 Ex. 70 Ex. 75 Ex. 80</small>	Total: USD 1,116.66	REFUNDRESTRICTIONS MAY APPLY	CHANGERESTRICTIONS MAY APPLY	
Air <small>Personal Security Ex. 8 Ex. 70 Ex. 75 Ex. 80</small>	Total: USD 163.20	REFUNDRESTRICTIONS MAY APPLY	CHANGERESTRICTIONS MAY APPLY	
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Forbidden Dangerous Items Examples:

Paints, lighter fluid, fireworks, tear gases, oxygen bottles and radiopharmaceuticals. There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person. For further information, contact your airline representative.

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To: Davis, Gail[Davis.Gail@epa.gov]; EPA@BCDTRAVEL.COM[EPA@BCDTRAVEL.COM]; Jackson, Ryan[jackson.ryan@epa.gov]; Willis, Sharnett[Willis.Sharnett@epa.gov]
From: EPA@BCDTRAVEL.COM
Sent: Tue 6/6/2017 5:09:33 PM
Subject: Travel Itinerary for JACKSON / RYAN T

TRAVELER NOTICE - Many airlines charge fees for baggage and other services. Amounts vary by airline and are subject to change.

Travelers are responsible for verifying all fees charged by individual carriers.

Please visit the operating carrier website of your ticketed itinerary for applicable fees.

Traveler

JACKSON / RYAN T

Reference number by traveler: TAA04FNW

Date	From/To	Flight/Vendor	Status	Depart/Arrive	Class/Type
06/07/201		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed		Economy / Y
06/07/201		FCO	Confirmed		Economy / X
06/11/201	MXP-	Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed		Economy / Y
06/11/201		Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F	Confirmed		Economy / Y

Delta Air Lines Flight Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Economy

Depart:

Weather

Arrive:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Weather

Duration: 1 hour(s) and 17 minute(s) Non-stop

Status: Confirmed - Delta Air Lines Record Locator:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Equipment: Canadair Regional Jet 900

*Operated By: Endeavor Air DBA Delta Connection

Seat: 10D (Non smoking, Window) Confirmed

Distance: 212 miles / 341.108 kilometers

CO2 Emissions: 116.6 lbs/53 kgs

Remarks: NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY. PLEASE CHECK WWW.DELTA.COM

Delta Air Lines Flight Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Economy

Depart:

Weather

Arrive:

Fiumicino, Terminal 3

Rome, Italy

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Thursday, June 8 2017

Weather

Duration: 8 hour(s) and 45 minute(s) Non-stop

Total duration: **13 hour(s) and 40 minute(s) including layover(s)**

Status: Confirmed - Delta Air Lines Record Locator:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Meal:
Equipment: Airbus Industrie A330-300
Seat: 38B (Non smoking) Confirmed
Distance: 4263 miles / 6859.167 kilometers
CO2 Emissions: 1,594.36 lbs/724.71 kgs
Remarks: SEAT ASSIGNMENT CONFIRMED:38B
NO FREQUENT FLYER IN YOUR PROFILE FOR CARRIER BOOKED

Emirates Flight Economy

Depart: Malpensa, Terminal 1 Weather
Milan, Italy
Sunday, June 11 2017

Arrive: Weather
Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Duration: 8 hour(s) and 50 minute(s) Non-stop
Status: Confirmed - Emirates Record Locator Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Meal: Meal
Equipment: Airbus Industrie A380-800 Passenger
Seat: Assigned at Check-in
Distance: 3982 miles / 6407.038 kilometers
CO2 Emissions: 1,489.27 lbs/676.94 kgs

Remarks: FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
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Jetblue Flight Economy

Depart: Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F Weather

Arrive:

Personal Security Ex. 6; Ex. 7C; Ex. 7E; Ex. 7F

Duration: 1 hour(s) and 27 minute(s) Non-stop
Total duration: **13 hour(s) and 12 minute(s) including layover(s)**
Status: Confirmed - Jetblue Record Locator: Y442001 M442001 Ex. 6 Ex. 7C Ex. 7E Ex. 7F
Equipment: Embraer 190
Seat: 10C (Non smoking, Aisle) Confirmed
Distance: 227 miles / 365.243 kilometers
CO2 Emissions: 124.85 lbs/56.75 kgs
Remarks: FOR UP TO DATE TRAVEL INFORMATION ON AIRLINE
CHECK-IN/RESTRICTIONS/LIMITATIONS/SECURITY.
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**

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06Jun/12:09PM

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Air	Car	Hotel	Rail	Other
1,279.86 USD				
Vendor	Fare information	Refund restrictions before departure	Change restrictions after ticketing	Ticket information
Air <small>Personal Security Ex. 6 Ex. 7C Ex. 7E Ex. 7F</small>	Total: USD 1,116.66	REFUND RESTRICTIONS MAY APPLY	CHANGE RESTRICTIONS MAY APPLY	
Air <small>Personal Security Ex. 6 Ex. 7C Ex. 7E Ex. 7F</small>	Total: USD 163.20	REFUND RESTRICTIONS MAY APPLY	CHANGE RESTRICTIONS MAY APPLY	

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Paints, lighter fluid, fireworks, tear gases, oxygen bottles and radiopharmaceuticals. There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person. For further information, contact your airline representative.

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To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Brown, Byron[brown.byron@epa.gov]; Elliott Laws (ELaws@crowell.com)[ELaws@crowell.com]; Marianne Horinko (mhorinko@thehorinkogroup.org)[mhorinko@thehorinkogroup.org]; Kenneth von Schaumburg (kvonschaumburg@clarkhill.com) (kvonschaumburg@clarkhill.com)[kvonschaumburg@clarkhill.com]; Deely, Sheila H.[sdeely@fmi.com]
From: Cobb, William
Sent: Thur 6/15/2017 3:35:43 AM
Subject: follow-up meeting on CERCLA108(b)

Mr. Jackson:

On behalf of Freeport-McMoRan, we appreciated the opportunity to meet with you on May 5, 2017, concerning EPA's Proposed Rule on Financial Responsibility for the Hardrock Mining Industry (CERCLA 108b). You may recall that at that meeting, we discussed key points in Freeport's written comments filed in the docket on that same date and provided you a hard copy of those comments. Our view is that EPA's proposed rule did not properly consider state programs governing hardrock mining, particularly mining on private lands, and significantly underestimated the economic impact of the rule on the hardrock mining industry. As we stated in that meeting, Freeport-McMoRan, a major U.S.-based company that is also the world's largest publicly traded copper mining company, updated its Risk Factor relating to this proposed rule in its Form 10-Q filed with the SEC for the first quarter 2017. In that update we indicated that it would be difficult, if not impossible, to obtain the level of financial assurance mandated under the proposed rule.

At the conclusion of our May 5 meeting you indicated that the agency would be interested in further understanding the demonstrated evidence regarding regulation of hardrock mining by state programs. We will be filing additional comments on the proposed rule in early July and those comments will include extensive information on the state programs relevant to our operations (Arizona, New Mexico, and Colorado). We would like share those observations with you.

Last, we are ready to discuss the administrative process and the prior involvement of the D.C. Circuit Court, including the deadlines in the settlement agreement between EPA and environmental groups and the Court's approval of those deadlines, over the formal written objections made by Freeport to the Court.

We are available to meet during the week of July 17 (our preferred dates), on July 7, or during early August on a day convenient for you. We look forward to having a follow-up conversation

with you on this proposed rule that is financially material to our company

William Cobb

Vice President, Environmental Services & Sustainable Development

Freeport-McMoRan Inc.

333 N Central Ave

Phoenix, AZ 85004

Ex. 6 - Personal Privacy

wcobb@fmi.com

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Afzal Bari
Sent: Tue 6/13/2017 11:23:36 AM
Subject: Does Washington Trust Social Media? Share Your Opinion

Colleagues,

Last spring, **1 in 4 DC Insiders cited social media as a trusted source for Washington news and information**, up from 1 in 10 the year before. Will the upward trend continue? Or are we becoming more skeptical of social content?

These are questions many are asking, and National Journal Research is partnering with policy professionals across city to develop the answers. Please accept this invitation to contribute your views in the 2017 **Washington in the Information Age** survey.

[Participate Here.](#)

We hope you'll take **15 minutes** to help deepen our collective understanding of how the evolving media landscape shapes policy decision-making. Responses are kept **strictly confidential** and only presented in the aggregate.

We greatly appreciate your time, and in exchange for your participation in this research, we will provide you with priority access to the study's executive summary.

Thank you for all that you do,
Afzal Bari
Executive Director, Product & Marketing Strategy
National Journal

If you have trouble accessing the survey above, please use the link below.

https://njresearch.co1.qualtrics.com/jfe/form/SV_7VRHmJBmfWYtV0p?Q_DL=ag7r0Dm2CnCLiVT_7VRHmJBmfWYtV0p_MLRP_eeRsH

PRIVACY AND CONFIDENTIALITY: This study is conducted by National Journal Research. National Journal maintains a strict firewall between its research and newsroom; journalists do not have access to these data. If you participate, your identity and responses will remain confidential.

Follow the link to opt out of future emails: [Unsubscribe](#)

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Chris Hessler
Sent: Thur 6/1/2017 11:51:14 PM
Subject: Re: Sicily.

I hear you.
Boss did a good job today.

> On Jun 1, 2017, at 6:55 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

>
> Man I don't know.

>
>
> _____
> Ryan Jackson

> Chief of Staff

> U.S. EPA

> **Ex. 6 - Personal Privacy**

>
>> On Jun 1, 2017, at 6:34 PM, Chris Hessler <CHessler@ajw-inc.com> wrote:
>>

>> Ryan,

>> Debating going to Sicily.

>> A) when are you gonna be there?

>> B) do you expect to have any evenings free - or you on duty the whole time?

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Toast to Congress 2017
Sent: Wed 6/7/2017 7:24:21 PM
Subject: Toast to Congress Reminder

See you tonight at WSWA's Toast to Congress!

Please remember to bring your State-Issued Driver's License/ID

No persons under 21 will be permitted entry

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This email was sent to jackson.ryan@epa.gov

[Unsubscribe](#)

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Murray, Suzanne
Sent: Mon 6/5/2017 4:35:34 PM
Subject: Introduction from Kevin Igli and request for a meeting on Renewable Fuel Standard issue for small gasoline retailers
FINAL SRC COMMENTS REQUEST TO CHANGE THE POINT OF OBLIGATION.pdf
FINAL NOI SRC (2).pdf

Mr. Jackson:

I hope that this e-mail finds you well. Kevin Igli, a long-time friend and client, gave me your name and suggested that I reach out to you on an issue that has national implications.

I represent the Small Retailers Coalition, a nonprofit, national trade association with over 200 members across the United States. We represent the interests of thousands of small, independent petroleum retailers and convenience stores in combating the uneven playing field created by the Renewable Fuel Standard (RFS). To level the playing field, we are asking EPA to shift the obligation for compliance under the RFS to the rack seller or blender. The SRC was formed exclusively to help our members advocate this position to EPA, the White House, and other governmental bodies.

www.smallretailerscoalition.com

Small gasoline stations and convenience stores supply approximately 70% of the fuel sold to customers in this Country. Of the roughly 140,000 convenience stores that sold fuels in 2016, less than 1% (316 stores total) are owned by one of the five major oil companies.

While the major oil companies are withdrawing from retail operations, their brands remain. In fact, roughly half of retail outlets sell fuel under the brand of one of the 15 largest refiner-suppliers. Virtually all of these branded locations are operated by independent entrepreneurs who have signed a supply contract with a particular refiner/distributor to sell a specific brand of fuel, but these retailers do not share in the profit/loss of their suppliers.

<http://www.nacsonline.com/YourBusiness/FuelsCenter/Operations/Articles/Pages/Who-Sells-Americas-Fuel.aspx>

I raise this so that you know, although individually our members are small businesses, in aggregate, this sector is critical to the nation's fuel distribution system and is being shut

down by an unintended consequence of the Renewable Fuel Standard's current point of obligation. Also, although we are aligned on many issues with our national trade organizations like NACS, SIGMA and NATSO, on this issue we are diametrically opposed – quite simply because large retailers that can blend are using the RIN as a multi-billion dollar subsidy to shutter small retailers. (It is predicted that the number of small retail gas stations will drop from 140,000 to 115,000 over the next 12 months because of the extra access to cash the RIN gives large retailers.)

As our Chairman, Bill Douglass, the founder and Chairman of Douglass Distributing says, "Don't take my word for it, take theirs." Included as an attachment to this email is one set of our comments to EPA in which we excerpted just a few of the statements made by large retailers in their K filings to the SEC. Like this statement from Couche-Tard CFO Claude Tessier, "We got generally broader access to RINs in the U.S. than most of our competition. So as RINs increase in value we think that widens our competitive advantage and then finally we focus on the Categories. So we think we were widening what we believe it's a key competitive and sustainable advantage in the fuel space."

Moreover, although EPA has recognized historically that mandated renewable fuel volumes cannot be met because of constraints on the retail sector, EPA has never met its statutory obligations to review the impact of the RFS on small retailers. As such, we sent a Notice of Intent to Sue ("NOI") to EPA on this issue shortly after the transition, and, although we have been working with your career staff on the issue, we have not reached out to Administrator's Office until now. I have attached the NOI for your convenience.

Kevin suggested that you would be the best contact for this issue to ask for a brief meeting to let you know the impact the current point of obligation is having on small retailers across the Country and to tee up the action that we may file within the next 60 days. We are also meeting with OMB regarding the same issue for the 2018 RVO.

I know that you are incredibly busy, but we will be in DC June 13 and 14 and would like to see if we can set up a meeting with the right people from the Administrator's team to discuss this issue. We will not bring an entourage, but would like to have the opportunity to raise this directly with the Administrator's Office before going forward.

Thank you for your consideration, and hope to meet you in person in the near future.

Warm regards,

Suzanne Murray

haynesboone

Suzanne Murray

Partner

suzanne.murray@haynesboone.com

Haynes and Boone, LLP

2323 Victory Avenue

Suite 700

Dallas, TX 75219-7672

(t) 214.651.5697

(f) 214.200.0710

(m) Ex. 6 - Personal Privacy

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• • •  • • •

Small Retailers COALITION

Bill Douglass
Chairman
Small Retailers Coalition
PO Box 35537
Washington, DC 20033

May 8, 2017

Via Certified Mail – Return Receipt Requested

Scott Pruitt
Administrator
U.S. Environmental Protection Agency
Mail Code 1101A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Re: **Notice of Intent to Sue**

Dear Administrator Pruitt:

First, on a personal note, Bill Douglass and I would like to wish you the best in your new role as Administrator. As a former EPA Regional Counsel, I can appreciate the excitement and some of the challenges associated with this transition time. We wish you and your team every success. Mr. Douglass is the Chairman of Douglass Distributing in Sherman, Texas and the Chairman of the Small Retailers Coalition (“SRC”), a group of 200-plus small retailers across the nation who own and operate branded and unbranded gasoline stations and convenience stores.¹ We met briefly at Earth Day Texas, where Bill gave you his card and let you know that we would be reaching out on a critical issue for small retailers. You were gracious and offered to listen to our concerns.

At the outset, although this letter lays out notice of legal claims that the SRC may pursue against EPA, we hope that this can also be the beginning of a dialogue with EPA with the goal that EPA will consider addressing our concerns without litigation.

Notice of Intent

This letter provides notice that the SRC intends to file suit pursuant to section 611 of the Regulatory Flexibility Act (“RFA”), 5 U.S.C. § 611(a)(1), against the United States Environmental Protection Agency (“EPA”) and its Administrator based on EPA’s noncompliance with sections 603 and 604 of the RFA. This action is necessary because EPA failed to follow the statutorily required process for evaluating the adverse economic impacts of the final Renewable Fuel Standard (“RFS”) regulations for Renewable Fuel, Advanced Biofuel,

¹ Our retailers distribute gasoline under brands from major integrated refiners, independent refiners and under independent brands.

and Cellulosic Biofuel for 2017 and the RFS Regulations for Biomass-Based Diesel for 2018 (the “2017 Final Rule”)² on small petroleum retailers when it promulgated this final rule.

Our claim is that, despite the fact the 2017 Final Rule is premised on “driving the market to overcome constraints in renewable fuel *distribution infrastructure*,”³ EPA failed to prepare and make available for public comment the required regulatory flexibility analyses concerning the impact of the current RFS on small petroleum retailers – which comprise approximately 75 percent of the fuel distribution outlets in the nation.

Moreover, we intend to bring a claim that, by failing to consider the adverse economic impacts of the RFS on small retailers in any previous rulemaking under the RFS, EPA could not and did not make a good faith certification under the RFA that the 2017 Final Rule “will have no significant economic impact on a substantial number of small entities.”⁴ In particular, EPA failed to meet its obligation under the RFA by refusing to analyze the impact on small retailers of the current obligation for compliance in the RFS annual standards or “point of obligation”—which is currently placed on refiners and importers of gasoline and diesel fuel (“obligated parties”). Although notice for this claim is not legally required, the SRC is sending this notice letter as a courtesy to make EPA aware of the issue and to facilitate resolution.

This letter also provides the legally required notice, pursuant to 42 U.S.C. § 7604(b), that the SRC intends to file a citizen suit against EPA and its Administrator, based on EPA’s failure to perform nondiscretionary duties mandated by the RFS under section 211(o) of the Clean Air Act (“CAA”). Specifically, EPA has failed to annually evaluate and adjust the regulations implementing the RFS program (in particular, the point of obligation) to ensure that they are “appropriate” as required by 42 U.S.C. §§ 7545(o)(2)(A), (o)(3)(B). EPA has also failed to complete the periodic review mandated by 42 U.S.C. § 7545(o)(11) to allow for the appropriate adjustment of the requirements of the RFS program as it relates to the point of obligation.

Background

On March 26, 2010, EPA issued final regulations establishing amendments to RFS program regulations.⁵ These regulations included 40 C.F.R. § 80.1406, which established the point of obligation. As required by section 604 of the RFA, EPA prepared a final regulatory flexibility analysis in conjunction with issuing the March 26, 2010 rule. However, the *only* small entities that EPA considered in this analysis were small refineries.⁶ EPA did not consider the impact the rule would have on small petroleum retailers, even though the rulemaking specifically

² 81 Fed. Reg. 89,746 (Dec. 12, 2016).

³ *Id.*

⁴ *Id.* at 89,802.

⁵ 75 Fed. Reg. 14,670 (Mar. 26, 2010).

⁶ See EPA, RENEWABLE FUEL STANDARD PROGRAM (RFS2) REGULATORY IMPACT ANALYSIS, at 990 (Feb. 2010) (See Table 7.3-1).

states that fuel dealers are “potentially regulated entities” under the 2010 rule.⁷ Moreover, EPA never did an analysis of how the RFS impacts small retailers in any subsequent final rules significantly amending the RFS in 2016 and in the 2017 Final Rule.

This is relevant because in the 2017 Final Rule, EPA largely relied on its RFA analysis from 2010 to come to the conclusion that no small entities (meaning small refiners) would suffer “significant adverse economic impact” from the RFS program through 2022.⁸ This is despite the voluminous evidence in the record before EPA that the current point of obligation in the RFS is resulting in substantial economic hardship for small retailers.

The point of obligation not only is creating an uneven playing field for the fuel distribution market, it is also resulting in a dramatic reduction in the number of small retail fuel outlets for consumers. The 2017 Final Rule is replete with EPA theories about why the fuel distribution system in the United States cannot supply the required volumes of renewable fuels under the RFS, and yet, EPA refused to even analyze the impact of the program on small retailers (which, in the aggregate, comprise 75 percent of the retail fuel distribution sources in the country) as required by both the RFA and the RFS.

This was not a fact that just surfaced in the 2017 Final Rule. Since early 2014, small retailers and certain obligated parties have questioned whether 40 C.F.R. § 80.1406 should be amended and have filed formal petitions for reconsideration or revision of the definition of “obligated party.”⁹ These obligated parties contend that the system for demonstrating compliance with the annual RFS standards—through acquiring and remitting Renewable Identification Numbers (“RINs”) to EPA—is not operating as intended and is driving up prices for obligated parties, retailers and consumers. In particular, they assert that the “the regulatory definition of ‘obligated party’ is a root cause of the RIN system’s inefficiency, because it allows

⁷ 75 Fed. Reg. 14,670, 14,670.

⁸ 81 Fed. Reg. 89,746, 89,802-03.

⁹ On January 27, 2014, Monroe Energy LCC (“Monroe”) filed a “petition to revise” 40 C.F.R. § 80.1406 to change the point of obligation, and on January 28, 2016, Monroe filed a “petition for reconsideration” of the regulation. On February 11, 2016, Alon Refining Krotz Springs, Inc.; American Refining Group, Inc.; Calumet Specialty Products Partners, L.P.; Lion Oil Company; Ergon-West Virginia, Inc.; Hunt Refining Company; Placid Refining Company LLC; and U.S. Oil & Refining Company (the “Small Refinery Owners Ad Hoc Coalition”) filed a petition for reconsideration of 40 C.F.R. § 80.1406. On February 12, 2016, Valero Energy Corporation and its subsidiaries (collectively, “Valero”) filed a “petition to reconsider and revise” the rule. On June 13, 2016, Valero submitted a petition for rulemaking to change the definition of “obligated party.” On August 4, 2016, the American Fuel and Petrochemical Manufacturers (“AFPM”) filed a petition for rulemaking to change the definition of “obligated party.” On September 2, 2016, Holly Frontier also filed a petition for rulemaking to change the definition of “obligated party.”

unobligated blenders to profit from RINs rather than passing their value through to retail customers in the form of subsidized E85 prices.”¹⁰

Likewise, small retailers are adversely impacted by the current point of obligation in the RFS program and have raised this issue to EPA. This is because of the requirement that places the obligation for compliance with renewable fuel mandates on fuel importers and refiners, rather than on blenders, allows large corporate mega-retailers that have the capability of blending gasoline or diesel with a renewable fuel at the rack to capture the RIN from the renewable fuel source.¹¹ Because these large retailers are not obligated parties under the RFS, they are then free to sell RINs and pocket the revenue.

Smaller retailers, in contrast, are unable to blend fuel because they don’t have access to the necessary infrastructure, and are forced to buy the finished product directly from blenders. As a result, large retailers with blending capabilities are making windfall profits from the sale of RINs, allowing them to then artificially lower the price of gasoline just enough to undercut small retailers and push them out of the market.¹²

Like small refiners, small retailers have made EPA repeatedly aware that an unintended market consequence of the current point of obligation is that it is creating a substantial economic hardship for 75 percent of retailers in this country’s fuel distribution sector. It is creating haves and have-nots on a scale never before experienced in the retail fuel sector. The reality is that the point of obligation is creating such a market imbalance that the Small Retailers Coalition had to form in order to represent the interests of the small retailers.¹³

Unfortunately, the large trade associations like the National Association of Convenience Stores (NACS) and the Society of Independent Gasoline Marketers of America (SIGMA) do not represent the interests of the small retailers on this issue. This is because large retailers—who command superior resources—have captured these associations and are incentivized to safeguard the multi-billion dollar windfall these large retailers enjoy from selling their unobligated RINs. There is a clear divide in the retail fuel distribution industry; it is large mega corporations versus small independent businesses.

¹⁰ Obligated Party Petitioner’s Opening Brief Regarding EPA’s Refusal to Consider the Appropriate Placement of the Compliance Obligation in the Final Rule, at 31, *Americans for Clean Energy v. EPA*, No. 16-1005 (D.C. Cir. Sept. 8, 2016), ECF No. 1634780.

¹¹ The terminal rack, or simply “terminal” or “rack,” is the point at which fuel is prepared and distributed into the commercial market. It is where fuels are blended to meet the RFS and other requirements, and are then distributed into commerce.

¹² This does not mean they are passing on the windfall from the RIN to consumers or selling more E-85 than other blends. These mega-retailers are only passing on a fraction of the RIN value to undercut small competitors that cannot sell the unobligated RIN. The large retailers, in turn, pocket the difference as profit. Alex Holcomb, *Market Analysis of the Proposed Change to the RFS Point of Obligation*, at 9-11 (Feb. 22, 2017) (unpublished manuscript), <http://www.alexiholcomb.com/wp-content/uploads/2017/05/Economic-Analysis.pdf>.

¹³ *About – SRC*, SMALL RETAILERS COALITION, <http://smallretailerscoalition.com/about-the-chairman/> (last visited May 3, 2017).

This is precisely the scenario Congress sought to address in the RFA and why it specifically directed EPA to review the economic impact of its regulations on small business in the RFA. In the Small Business Administration's ("SBA") *A Guide for Government Agencies – How to Comply with the Regulatory Flexibility Act*, the SBA states that:

The goal of Congress in creating the RFA was to change the regulatory culture in agencies and mandate that they consider regulatory alternatives that still achieve statutory purposes, while minimizing the impacts on small entities.¹⁴

Under the RFA, a covered agency is directed that it must "consider the impacts of its regulatory proposals on small entities, analyze effective alternatives that minimize small entity impacts, and make their analyses available for public comment."¹⁵ The SBA Guidance goes on to say that:

The RFA does not seek preferential treatment for small entities, require agencies to adopt regulations that impose the least burden on small entities, or mandate exemptions for small entities. Rather, it requires agencies to examine public policy issues using an analytical process that identifies, among other things, barriers to small business competitiveness and seeks a level playing field for small entities¹⁶

Even so, despite knowing that the current point of obligation is having a devastating economic impact on small retailers, EPA never analyzed the impacts of this rule on small business in the retail fuel industry. Meanwhile, tens of thousands of small retailers have been pushed out of the market at a record rate as a consequence of the misplaced point of obligation and resulting dysfunctional RIN market. This does not comport with the RFA.

EPA erred when it failed to consider small retailers in its regulatory flexibility analyses

The Regulatory Flexibility Act ("RFA"), 5 U.S.C. §§ 601–612, as amended by the Small Business Regulatory Enforcement Fairness Act ("SBREFA"), requires that federal agencies consider potential impacts of their rules on small entities. The RFA applies to any rule subject to notice-and-comment rulemaking under section 553(b) of the APA or any other law. *See* 5 U.S.C §§ 553(b), 603(a). Thus, regulations promulgated under the RFS program are subject to the requirements of the RFA.

"Whenever an agency . . . publish[es] general notice of proposed rulemaking for any proposed rule," the RFA requires agencies to "prepare and make available for public comment

¹⁴ SMALL BUSINESS ADMINISTRATION, *A GUIDE FOR GOVERNMENT AGENCIES: HOW TO COMPLY WITH THE REGULATORY FLEXIBILITY ACT*, at 7 (May 2012), available at https://www.sba.gov/sites/default/files/advocacy/rfaguide_0512_0.pdf.

¹⁵ *Id.* at 1.

¹⁶ *Id.*

an initial regulatory flexibility analysis” that “describe[s] the impact of the proposed rule on small entities.” 5 U.S.C. § 603(a).

An agency must also prepare a final regulatory flexibility analysis whenever it “promulgates a final rule under section 553 of [the APA].” *Id.* § 604(a). In addition, an agency must comply with the small-entity analysis requirements of the RFA if it effects a substantive change in a regulation. *See Int’l Internship Programs v. Napolitano*, 853 F. Supp. 2d 86 (D.D.C. 2012), *aff’d*, 718 F.3d 986 (D.C. Cir. 2013). An agency can bypass the small-entity analysis requirements in the RFA if the head of the agency certifies that the “rule will not, if promulgated, have a significant economic impact on a substantial number of small entities.” 5 U.S.C. § 605(b). Failure to comply with one or more of the statutory requirements authorizes courts to take “corrective action consistent with” the RFA, “including, but not limited to (A) remanding the rule to the agency, and (B) deferring the enforcement of the rule against small entities” 5 U.S.C. § 611(a)(4).

Further, EPA published guidance to its rule writers in regards to RFA requirements clearly dictating that:

[Y]ou should analyze who is subject to the requirements of the rule even if the rule is either not immediately enforceable or does not impose immediately applicable requirements on those subject to the rule. You should perform this analysis as long as you know (1) who will be regulated; and (2) what requirements will be imposed.¹⁷

Despite the fact the RFS explicitly states that it applies to “[e]ntities . . . involved with the . . . distribution and sale of transportation fuels, including gasoline and diesel fuel, or renewable fuels such as ethanol and biodiesel,”¹⁸ EPA never did any analysis whatsoever on the effects of the RFS and the point of obligation on small retailers, in any version of the rule from 2010 through 2017. It’s not that EPA’s analysis is insufficient; it is non-existent. This failure to even consider the significant economic impacts on small retailers is a procedural deficiency, which—as a defect in the flexibility analyses—is a sufficient basis for a court to strike down the rule.¹⁹

¹⁷ EPA, FINAL GUIDANCE FOR EPA RULEWRITERS: RFA AS AMENDED BY THE SBREFA, at 13 (Nov. 30, 2006), <https://www.epa.gov/sites/production/files/2015-06/documents/guidance-regflexact.pdf>.

¹⁸ 75 Fed. Reg. at 14,670; 81 Fed. Reg. 89,746, 89,746 (Dec. 12, 2016); *see also* 42 U.S.C. § 7545(o)(2)(A)(iii) (“[R]egulations promulgated under [the RFS] . . . shall contain compliance provisions applicable to refineries, blenders, distributors, and importers, as appropriate.” (emphasis added)).

¹⁹ *See, e.g., Aeronautical Repair Station Ass’n, Inc. v. F.A.A.*, 494 F.3d 161 (D.C. Cir. 2007); *Nat’l Ass’n of Home Builders v. U.S. Army Corps of Engineers*, 417 F.3d 1272 (D.C. Cir. 2005) (resolved by partial consent judgment); *Thompson v. Clark*, 741 F.2d 401 (D.C. Cir. 1984); *Nw. Min. Ass’n v. Babbitt*, 5 F. Supp. 2d 9 (D.D.C. 1998); *S. Offshore Fishing Ass’n v. Daley*, 995 F. Supp. 1411 (M.D. Fla. 1998).

Failure of EPA to even consider the impacts of the point of obligation on retailers in the 2017 Final Rule is particularly egregious because EPA states:

The final standards are expected to continue driving the market to overcome *constraints in renewable fuel distribution infrastructure*, which in turn is expected to lead to substantial growth over time in the production and use of renewable fuels.²⁰

How can a rule that does not even consider the impacts on gasoline retailers adequately address constraints in distribution? How can a rule that doesn't take into account that the point of obligation is closing tens of thousands of retail outlets every year, "lead to substantial growth over time in the ... use of renewable fuels?"

EPA's compliance with the RFA is subject to judicial review in connection with EPA's failure to consider the economic impact of the point of obligation on small retailers in EPA's rulemaking under the RFS.²¹ Under section 611 of the RFA, "a small entity that is adversely affected or aggrieved by final agency action is entitled to judicial review of agency compliance with the [RFA] requirements." 5 U.S.C. § 611(a)(1). Since the promulgation of regulatory amendments to the RFS in 2010 to issuing the 2017 Final Rule, EPA has repeatedly failed to satisfy its statutory obligation to consider the impact of its regulatory proposals on small petroleum retailers and to analyze regulatory alternatives that can achieve the RFS's goal while minimizing the burden on small petroleum retailers. *See id.* §§ 603(a)–(c), 604(a)–(c). As such, unless EPA takes action to move the point of obligation to the rack as a regulatory alternative, the SRC will file action for judicial review.

EPA failed to perform nondiscretionary duties under the CAA

The RFS program was intended to drive the market towards greater volumes of renewable fuels available in the marketplace, not to drive small- and medium-sized retailers out of business. Through the RFS program, Congress mandated the introduction of increasing volumes of renewable fuel into the national pool of transportation fuel. CAA § 211(o)(2)(A)(i). EPA unequivocally embraces this goal: "the fundamental objective of the RFS provisions under the CAA is clear: To increase the use of renewable fuel in the U.S. transportation system every year through at least 2022 in order to reduce greenhouse gases (GHGs) and increase energy security."²² EPA must implement the mandates of the CAA—including the continuing duties the statute imposes—consistent with this objective.

²⁰ 81 Fed. Reg. 89,746 (Dec. 12, 2016).

²¹ EPA itself has stated that it recognizes that "in any rulemaking to modify the RFS point of obligation, EPA would need to consider the impacts on small entities, as it did in prior rulemakings." Proposed Denial of Petitions for Rulemaking to Change the RFS Point of Obligation, at 43 (Nov. 10, 2016), <https://www.epa.gov/sites/production/files/2016-11/documents/420d16004.pdf>.

²² 80 Fed. Reg. 77,419, 77,421 (Dec. 14, 2015).

EPA, however, has failed to consider and address through rulemaking its determination of the appropriate party obligated to satisfy the RFS volumes, and its impact on the distribution of renewable fuels. In its current form, the point of obligation itself functions as a constraint on distribution and produces an unjustifiable and disproportionate adverse economic impact to small retailers.

Specifically, EPA has failed under the Act to perform these non-discretionary duties, which relate to defining the obligated party for Renewable Fuel Standards (“RFS”):

1. To “conduct periodic reviews of . . . the feasibility of achieving compliance with the requirements” and “the impacts of the requirements . . . on each individual and entity” regulated under the RFS. 42 U.S.C. § 7545(o)(11).
2. To evaluate and adjust annually the regulations implementing the RFS program to ensure that it regulates the “appropriate” parties. 42 U.S.C. §§ 7545(o)(2)(A)(iii), (o)(3)(B)(ii).

Under the CAA and EPA rules, the Agency must complete these duties within sufficient time to publish a final rule every November. 42 U.S.C. § 7545(o)(3)(B)(i); 40 C.F.R. § 80.1405(b).

EPA action is necessary to remedy the dysfunctional renewable fuels market and to ensure the survival of small, independent petroleum retailers. By failing to consider the effect of an improperly placed point of obligation on fuel distribution, EPA all but ensures the death of small petroleum retailers in addition to perpetuating the renewable fuel supply constraints it seeks to remedy.

SRC members are harmed

SRC members are directly and indirectly harmed by EPA’s failure to fulfill its statutory duties. The market inefficiencies associated with the misplaced point of obligation have created a multi-billion dollar financial windfall for large retailers that control the vast majority of blending terminals across the country. Moreover, the market inefficiencies created by the dysfunctional RIN market effectively undermine the CAA’s goal of increasing the distribution of renewable fuels across the country. To remedy these deficiencies, a change in the point of obligation is necessary. This change is within EPA’s authority to correct.

Person Providing Notice

As required by 40 C.F.R. § 54.3, the person providing this notice is:

Suzanne Murray
Haynes and Boone, LLP
2323 Victory Ave. Suite 700
Dallas, TX 75219
Phone: (214) 651-5697



Email: suzanne.murray@haynesboone.com

SRC would prefer not to resort to litigation to resolve the allegations set forth in this letter. The dire economic situation created by the current misalignment of the point of obligation, however, has left SRC no choice but to pursue all available legal remedies. We are available to discuss SRC's views on the appropriate placement of the point of obligation any time that is convenient for you. Please do not hesitate to contact me should you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Suzanne Murray".

Suzanne Murray
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February 20, 2017

Via Overnight Mail

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Re: **Comment for Docket: EPA-HQ-OAR-2016-0544 - Request to change the point of obligation in the Renewable Fuel Standard to the rack**

Dear Administrator Pruitt and Acting Assistant Administrator Dunham:

My name is Bill Douglass and I am the Chairman of the Small Retailers Coalition ("SRC"). I am writing to submit formal comments to the docket number above on behalf of the SRC. I am writing to beseech you to reconsider your Proposed Denial of Petitions for Rulemaking to Change the Renewable Fuel Standard ("RFS") Point of Obligation. Changing the point of obligation in the RFS is critical to the survival of small, single-store owners and medium-sized gas stations and convenience stores, which, together, comprise approximately 75 percent of the retail fuel market in the United States.¹

Let me underscore this: when EPA issued its Proposed Denial, it did not have the opportunity to consider any comments from 75 percent of the retail gasoline market most adversely impacted by the current point of obligation. In this action, we are providing you with a record to show that the current point of obligation is disadvantaging the vast majority of retailers in this nation and restraining fuel distribution in the Country.

This is not hyperbole. If the point of obligation is not moved to the position holder at the rack, the majority of small, single-owner gasoline stations in the United States will close or be bought out by mega-chains over the next 24 months.

In a presentation entitled "Shop Talk T.O.C. (Threats, Opportunities and Consolidation) in Mid and Downstream Fueling," the former CEO of The Cumberland Gulf Group projected

¹ See RETAIL FUELS REPORT at 3, NAT'L ASSOC. CONV. STORES (2016).

that the number of U.S. gas stations will drop from over 140,000 locations to a mere 115,000 sites. The reason is because:

Due to the increasing acquisition of convenience store chains by master limited partnerships flush with available cash, the c-store industry will continue to consolidate.²

He expects the future will be highlighted by:

- 32 major U.S. c-store retailers operating 56,000 gas stations;
- 15 grocery/hypermarts with a total of 14,000 sites;
- Two mega distributors operating a combined 5,000 locations;
- 20 super distributors with 18,000 sites;
- Just 12,000 single-store operators, a large decline compared to today; and
- 10,000 unmanned locations.³

This sums it up. The current point of obligation benefits large corporate entities and pushes small gas stations out of the market. This is purely a by-product of EPA's regulation dictating that the obligated parties are only the refiner or importer. EPA has created a government program that subsidizes the largest corporations in America and closes small businesses.

We know this is clearly not what EPA intended. EPA is trying to implement its Congressional mandate to get more renewable fuels into the marketplace. The RFS is not supposed to cut off distribution chains; instead, it is supposed to increase them.

We are the bulk of the fuel distribution in this Country. Don't shut us down.

Who We Are

Before I offer data to show how the current point of obligation is putting us out of business, I wanted to share with you who "we" are.

The Small Retailers Coalition is a 200-plus member organization made up of small- and medium-sized gas station and convenience store owners. The SRC was formed exclusively to help our members advocate to EPA, the White House, and state and federal legislators to educate them on how the current point of obligation is closing small businesses at a record rate across the Country.

² Brian Berk, *Threats, Opportunities & Consolidation in Fueling: Former Gulf CEO Joe Petrowski shares his outlook at SIGMA Annual Meeting*, Convenience Store News (Nov. 11, 2014), <http://www.csnews.com/node/73727>.

³ Joe Petrowski, Presentation at SIGMA Nashville: Shop Talk T.O.C. (Threats, Opportunities, and Consolidation) in Mid and Downstream Fueling (Nov. 2014).

We had to form when our national trade associations refused to advocate for us because the current point of obligation creates a multi-billion dollar financial windfall for the large retailers that now control the vast majority of blending terminals across the Country. As such, the current point of obligation has created the largest transfer of wealth from small business to corporate America in history.

We are independent business owners, the majority of whom own one store. We have ties to our local communities. We are first-generation immigrants and we are from families who have lived in our communities for generations. Many of us are minority business owners who are trying to live the American Dream and make it in a small business. This is why groups like “Empower Consumers”⁴ sent a letter to EPA asking to “Please Fix the Renewable Fuel Standard.” That letter (included as part of our record) lays it out pretty clearly:

What’s wrong with a few big gasoline retail chains enjoying extra profits generated by the RINs they sell on the market? Well, nothing—if you’re one of those chains. But if you happen to be an independent gasoline retailer (many of which are minority-owned) whose competition up the street is suddenly sitting on a pile of cash, it’s not so great. It means your competitor’s parent company has a newfound ability to spend money on buying up stations, or making their stations look more appealing than yours. Whatever they do, it’s not helpful to a small business earning a living as an independent gasoline retailer.⁵

They were joined by a resolution from the National Black Caucus of State Legislators (included as part of our record) urging EPA to fix this market injustice:

THEREFORE BE IT RESOLVED, the National Black Caucus of State Legislators (NBCSL) calls on the U.S. Environmental Protection Agency to adopt a rule to address problems in the RINs market by moving the point of obligation in order to eliminate incentives for excessive speculation and fraud.⁶

Why We Can’t Compete

The reason that small retail gas stations cannot compete fairly in the current market is because the current point of obligation is removed from the rack—that is, the bulk terminal or truck loading terminal where entities control whether gasoline is blended. The large retailers now largely control these terminals and can decide who gets positions at the rack. As a result,

⁴ See *Our Mission*, EMPOWER CONSUMERS, <http://www.empowerconsumers.org/about-us/our-mission/> (last visited Feb. 20, 2017).

⁵ Letter from Daryl Bassett, Chairman, Empower Consumers, to EPA, *EPA, Please Fix the Renewable Fuel Standard*.

⁶ Resolution BED-17-15, Nat’l Black Caucus of State Legislators (Dec. 3, 2016), available at http://nbcsl.org/index.php/public-policy/resolutions/item/download/641_91cd4a86fcb96e5427d499b14bb42470.

large retail conglomerates are able to purchase gasoline unobligated and then blend it with ethanol or biofuels at the rack to generate a Renewable Identification Number (“RIN”).

These large retailers then sell the RIN to obligated parties and generate enormous windfall profits. This allows our large retail competitors to have a direct price advantage over small- and medium-sized retailers that I and other small/medium-sized retailers cannot match because we cannot blend fuel at the rack.

Small retailers have to purchase blended fuel at a premium. So, the base cost of my product is already higher than the cost to my large competitors that can blend fuel. This is a market reality that we can address through innovation and other marketing incentives. What we cannot overcome is that my largest competitors also get a \$.10 to \$.15 per gallon subsidy for selling the RIN to obligated parties. They are then able to use this profit to roll up small businesses.

Again, here is why the current point of obligation should be changed to the rack:

- 1) The current point of obligation gives large retailers a \$.10 to \$.15 per gallon advantage over small and medium suppliers that is unfair, anti-competitive, and creating an oligopoly in the retail fuel sector;
- 2) The large retailers, who are able to purchase gasoline unobligated, sell the RINs for a profit. They make such a significant percentage of their profits from RIN sales for E-10 that they have no incentive to invest in infrastructure to support the further penetration of renewables in the market place.

Small and medium retailers make up over 75 percent of the retail gas stations in this Country, but we have been abandoned by our trade associations like NACS, SIGMA, and NATSO. On the issue of the point of obligation, these associations have sided with the mega-distributors in our industry because they pay the lion’s share of dues. As our V.P. and Treasurer Stanley Roberts says about the mega-distributors: “They don’t outnumber us, they just out-money us!”⁷

Let me be clear: NACS, SIGMA, and NATSO DO *NOT* REPRESENT THE INTERESTS OF SMALL RETAILERS ON CHANGING THE POINT OF OBLIGATION. As a former Chairman of the Board of NACS, this personally saddens me. These organizations have historically served us well and continue to provide some valuable services for small and medium retailers, but on this issue, they have abandoned us for the biggest dues payers.

⁷ See *Small Retailers Coalition – RINs, the RFS, and EPA*, YOUTUBE (Dec. 21, 2016), https://youtu.be/Fpert_VSPOg for a video description of how the current point of obligation impacts small retailers.

We Need EPA to Act

Small and medium retailers have nowhere else to turn but to EPA. I ask you to please look at the market facts and consider them in your review of the underlying Petition. The only retailers that EPA cited in its Proposed Denial are the very retailers that get the windfall from the RIN without any obligation to the RFS.

The SRC and other small retailers were not able to provide facts and data in the original record because we did not exist as an organization at the time the Petition was filed. This is an issue of economic survival for us, and one that EPA has an obligation to correct in the rule by aligning the point of obligation with the point of blending at the rack. This simple, but critical, fix would minimize the economic burdens to small retailers and maximize the effectiveness of the RFS program.

The RFS program was designed to drive the market towards selling renewable fuels available in the marketplace, not to drive small- and medium-sized retailers out of business. We know that EPA does not intend to put such businesses in jeopardy across the country, and that there are other issues that EPA must contemplate in the RFS program. Moving the point of obligation, however, is a simple step that EPA can take to level the playing field for all gasoline retailers while allowing EPA to meet the goals that Congress laid out by eliminating this market barrier and protecting and maximizing the fuel distribution system in this Country.

Respectfully, here are the factors that EPA did not consider in its Proposed Denial:

- 1) EPA has not satisfied its statutory obligations to consider the economic impacts of the RFS and the point of obligation on the small retailers when it promulgated the RFS2 in 2010 and the implementing regulations for the point of obligation.

EPA has stated before the D.C. Circuit Court of Appeals that it believes “the proper place to seek to change the point of obligation” is this Petition.

As such, this is the vehicle through which EPA can correct the deficiency in the previous rulemaking process and “minimize the significant economic impact on small entities” by promulgating an alternative that will not disadvantage small businesses and provide a level playing field for all by changing the point of obligation to the rack.

- 2) The current point of obligation in the RFS program has resulted in and will continue to result in the decreased “distribution” of renewable fuels in the United States. As such, EPA has an obligation to lift this market impediment to maximize distribution outlets for renewable fuels and consumer choice.

1. EPA has a statutory obligation to minimize the economic impact of the RFS on small entities. This can be satisfied by granting the Petition.

The Regulatory Flexibility Act (“RFA”), 5 U.S.C. §§ 601–612, as amended by the Small Business Regulatory Enforcement Fairness Act (“SBREFA”), requires federal agencies to consider potential impacts of their rules on small entities. Under the RFA, agencies must conduct a regulatory flexibility analysis to analyze possible effects of a proposed rule on small businesses, unless the agency certifies that the “rule will not, if promulgated, have a significant economic impact on a substantial number of small entities.” 5 U.S.C. § 605(b).

Where a rule is anticipated to have significant economic impacts on a substantial number of small entities, the RFA’s provision governing preparation of a final regulatory flexibility analysis, 5 U.S.C. § 604, requires that the agency provide a description of the steps it has taken to minimize the significant economic impact on small entities consistent with the stated objectives of applicable statutes. This includes a statement of the factual, policy and legal reasons for selecting the alternative adopted in the final rule and why each one of the other significant alternatives to the rule considered by the agency which affect the impact on small entities was rejected. 5 U.S.C. § 604(5).

Further, EPA’s guidance to its staff when drafting rules clearly dictates that:

[Y]ou should analyze who is subject to the requirements of the rule even if the rule is either not immediately enforceable or does not impose immediately applicable requirements on those subject to the rule. You should perform this analysis as long as you know (1) who will be regulated; and (2) what requirements will be imposed.

Despite the fact the RFS2 explicitly states that it applies to “Entities . . . involved with *distribution and sale of transportation fuels, including gasoline and diesel fuel, or renewable fuels such as ethanol and biodiesel*,” EPA never did *any* analysis whatsoever on the effects of the RFS and the designation of obligated parties on retailers. It’s not that the analysis is insufficient; it is non-existent. This procedural defect in the rule should be addressed and corrected in EPA’s response to this Petition, as agencies have done historically when remedying a flawed rulemaking process.⁸

This failure to even consider the significant economic impacts of the RFS2 on small retailers is a procedural deficiency, which, as a defect in the flexibility analysis, can be grounds for a court to strike down the rule. The statutes do not dictate that EPA has to draft rules in a certain way, but it is clear EPA must perform the required analysis of the economic impact of its

⁸ See, e.g., *Aeronautical Repair Station Ass’n, Inc. v. F.A.A.*, 494 F.3d 161 (D.C. Cir. 2007); *Nat’l Ass’n of Home Builders v. U.S. Army Corps of Engineers*, 417 F.3d 1272 (D.C. Cir. 2005) (resolved by partial consent judgment); *Thompson v. Clark*, 741 F.2d 401 (D.C. Cir. 1984); *Nw. Min. Ass’n v. Babbitt*, 5 F. Supp. 2d 9 (D.D.C. 1998); *S. Offshore Fishing Ass’n v. Daley*, 995 F. Supp. 1411 (M.D. Fla. 1998).

regulations on small businesses impacted by the regulations. Failure to perform such an analysis or performing a substandard analysis of the impacts has led to remand of the rule in question or a resolution by the government that eliminated the “significant economic impact” on small entities.

EPA itself states in its Proposed Denial that it recognizes that “in any rulemaking to modify the RFS point of obligation, EPA would need to consider the impacts on small entities, as it did in prior rulemakings.” We agree! Please DO! EPA has never considered the effects of the RFS on small retailers as blenders in its SBREFA analysis in the historic or current rulemakings under the RFS. EPA has only considered the impacts on small refiners.

So, it is unacceptable that EPA is willing to abdicate its statutory responsibility and shut down potentially 60 percent of the fuel distribution in the United States because it hypothesizes that the “RFS market would experience significant uncertainty in such a transition.”

This deficiency must be corrected and can be in EPA’s response to this Petition. EPA has stated that “[t]he proper place to seek to change the point of obligation is a petition to reconsider.”⁹ Again, we agree!

In the Proposed Denial, EPA completely left out all analysis of the extreme market impact on small retailers and based the Proposed Denial almost exclusively on a letter submitted by retailers who financially benefit from the unobligated sale of the RIN. Of course these retailers oppose moving the point of obligation! They get a generous government subsidy that small business cannot access. How can we compete?

We can’t.

Even if EPA does not care about shutting down almost 100,000 small businesses, Congress directed EPA to care about maximizing the distribution outlets for renewable fuels. EPA states in the Proposed Denial that “changing the point of obligation is not expected to significantly impact the retail pricing of fuel blends with high renewable content.” This may or may not be true. As we all acknowledge, there are many variables that go into fuel pricing. But, what EPA overlooks is that regardless of price, the availability of all fuels will drop dramatically because retail outlets are closing due to the RIN doubling the fuel margins of the few select stores.

In its Proposed Denial, EPA also overlooks the market reality of what consumers want and will pay a premium for. In a market where 75 percent of the retailers are consistently undercut \$.03 to \$.15 a gallon on renewable fuels, they will offer alternatives like clear gasoline or E-0. There is a rising demand for clear gas in the market¹⁰ and consumers will pay an average

⁹ Brief for Respondent EPA, *Americans for Clean Energy v. U.S. Environmental Protection Agency*, No. 16-1005, at *119 (D.C. Cir. Dec. 15, 2016), Doc. No. 1651336.

¹⁰ See Carlton Carroll, *Consumer Demand for Ethanol-Free Gasoline is Strong and Rising*, API (May 20, 2015), <http://www.api.org/news-policy-and-issues/news/2015/05/20/api-consumer-demand-for-ethanol-free-gas>.

of \$.25 a gallon more for E-0 than they will for E-10. This is pushing the market in the opposite direction of what the RFS mandates.

2. **The current point of obligation in the RFS program has resulted in and will continue to result in the decreased “distribution” of renewable fuels in the United States. As such, EPA has an obligation to lift this market impediment to maximize distribution outlets for renewable fuels and consumer choice.**

In its brief to the D.C. Circuit Court of Appeals, EPA laid out that:

EPA has explained time and again in its annual renewable fuel standard rulemakings, this increased use of renewable fuels over time requires private parties to invest in production facilities and infrastructure to accommodate such fuels. *E.g.*, 80 Fed. Reg. at 77,453, 77,459-60. Annual reconsideration of the definition of obligated parties would reduce the regulatory certainty required for private parties to plan for growth.¹¹

While we support the argument that EPA has an obligation to review the point of obligation and other factors in the RFS annually to accurately capture market trends, we also appreciate that EPA’s overall charge is to increase the distribution of renewable fuels into the marketplace. Common sense would dictate that this means investment in infrastructure to distribute the fuels.

In the Proposed Denial, EPA relies on letters from mega-retailers that profit from the RIN which maintain that these large companies use the RIN profits to invest in infrastructure for renewable fuels and pass on the value on the RIN to consumers. This simply is not true. These conglomerates are using the windfall from selling RINs to make infrastructure investment in their operations or to roll-up small, independently owned gas stations. They do not use the value of the RIN to increase the volumes or concentrations of renewable fuels to consumers.

Here is how the giant corporate chains use the RIN. First, these mega-distributors use the RIN proceeds to artificially lower the cost of fuel just enough to undercut the competition that cannot enjoy the RIN—usually from \$.02 to \$.03 a gallon. They DO NOT pass on the value of the RIN to consumers. Instead, they just use a small portion of it to consistently underprice gasoline at the pump in order to drive small retailers out of business. (For a detailed discussion of how this occurs, please see pages 7–9 of the Amicus brief filed by the SRC in the D.C. Circuit Court of Appeals, which is attached in this submission.)

¹¹ Brief for Respondent EPA, *supra* note 9, at *113.

Next, once the small retailers are distressed, the mega-distributors offer to buy the single owner stores. This DOES NOT increase the number of pumps for distribution. The standards formula that mega-chains use is that for every store they open, they close five competitors!¹²

Don't take our word for it. Take theirs. The mega-distributors that sell RINs for profit may make claims in letters to EPA that RINs don't impact their bottom line and that they use profits to develop infrastructure for renewables. But they tell their shareholders a very different story in SEC filings and earnings calls.

For the sake of brevity, I have excerpted several quotes from public SEC filings, press releases, and earnings calls. (Along with these comments we will submit copies of the documents for your reference.)

Murphy's

- 2017-02-01 – Q4 2016 Press Release
 - “On a combined basis, PS&W and RINs effectively contributed 4.83 cpg to retail margins in the fourth quarter and 3.85 cpg for the full year.” (page 2).
- 2016-11-03 – Form 10-Q
 - “[O]ur cost of goods sold is impacted by our ability to leverage our diverse supply infrastructure in pursuit of obtaining the lowest cost fuel supply available; for example, activities such as blending bulk fuel with ethanol and bio-diesel to capture and subsequently sell Renewable Identification Numbers (“RINs”).” (page 28).
 - “In recent historical periods, we have benefited from our ability to attain RINs and sell them at favorable prices in the market.” (page 28).
- 2016-11-03 – Q3 2016 Earnings Call
 - “Improvement in product supply and wholesale contribution, net of RINs, recovered almost half of the decline in the retail fuel contribution. Together, these two components added \$0.0175 per gallon on a retail equivalent basis versus a negative \$0.022 per gallon contribution last year. RIN sales of \$48 million offset product supply and wholesale contribution of negative \$29 million, as higher RIN prices embedded in the refinery spot

¹² See, e.g., *Texas Continues to Lead U.S. C-store Count: Industry finds fewer single-store owners are selling fuel*, CONVENIENCE STORE NEWS (Feb. 3, 2017), <http://www.csnews.com/industry-news-and-trends/corporate-store-operations/texas-continues-lead-us-c-store-count>; Catherine MacMillan, *Truck Stops: Reviews, Trivia and Features of the North American Chains*, SMART TRUCKING (Aug. 8, 2016), <http://www.smart-trucking.com/truck-stops.html>; Citizens Commercial Banking, *Consolidation in the Convenience & Retail Fuel Sector: Strategies for Capturing Value* (2015);

prices reduced our spot to wholesale rack margins, which stayed negative for much of the quarter.” (page 4).

- “While the net contribution is expected to be above guidance, the product supply and wholesale results alone will be below the \$25 million to \$45 million range, while RINs sales will exceed the \$0.30 to \$0.50 per-RIN range we guided to. Since RIN prices are essentially embedded in the refinery spot prices, investor focus should remain on the net contributions.” (page 5).
- “[W]e’re going to continue to report RINs and other income just like refiners report the cost of it separately. I gave a real clear example of how it nets off against our piece, and it’s still going to be in that \$0.025 to \$0.03 range. The refiners have that built into their refinery margin. They just like to call out the cost separately. And I appreciate that refinery margins are now at a very low point again, but that’s largely due to the refinery economics, the excess product, the high utilization and the more macro factors, and not really about RINs.” (page 15).
- 2016-08-04 – Q2 2016 Earnings Call
 - “[P]eople shouldn’t get overly excited in our earnings if RINs are at \$0.90 versus \$0.50 because you see that impact in the trade-off because spot prices are higher, and that is something, I think, the EPA and RSS anticipated.” (page 8).
- 2016-05-09 – Q1 2016 Earnings Call
 - “But then you’ve got the regulators who will be announcing, hopefully by the end of May, their proposal for the RFS ethanol mandates for 2017. Then those are enacted in November. So depending on whether or not they ratchet up the ethanol mandate or not, that benefit of balancing the supply/demand of RINs may be short-lived if they decide to raise the mandate further.” (page 10).
- 2016-03-08 – Raymond James 37th Annual Investors Conference Presentation
 - “So what’s the differentiated capability that sets us apart? It’s our fuel supply chain. And the way we do that is 50% of the gallons we sell are sourced through proprietary barrels, meaning we buy them from the refiners in the refining centers, we ship them through the pipeline systems for which we have access through our historical shipper status. And that takes decades to build. If you wanted to get in this business tomorrow, you could not go and get pipeline access on most of these pipelines. We take that into mostly third-party terminals. We blend it with ethanol. That captures the RIN. And that leaves us with a landed cost of supply when you add that supply advantage plus the RINs, that’s going to be advantaged over our competitors.” (page 4).

- “We have access to the RINs through the blending. We have the credit. We have the scale and scope to hold the working capital and manage through the volatility that smaller competitors don’t have.” (page 5).
- 2016-02-26 – Form 10-K (FY 2015)
 - “[W]e believe our business model provides additional upside exposure to opportunities to enhance margins and volume. For example, incremental revenue is generated by capturing and selling Renewable Identification Numbers (RINs) via our capability to source bulk fuel and subsequently blend ethanol and bio-diesel at the terminal level.” (page 3).
 - “[O]ur revenues are impacted by our ability to leverage our diverse supply infrastructure in pursuit of obtaining the lowest cost of fuel supply available; for example, activities such as blending bulk fuel with ethanol and bio-diesel to capture and subsequently sell Renewable Identification Numbers (“RINs”).” (page 30).
- 2016-02-04 – Q4 2015 Earnings Call
 - Murphy is a “major beneficiary of RINs with our proprietary supply chain.” (page 3).
 - “RINs, of course, are a source of strength in the PS&W portfolio, given our ability to ship over 50% of our retail barrels and blend the ethanol ourselves.” (page 6).
 - “If you dial back your wholesale and then dial back your shipping, you would ultimately start losing that line space, which is a critical advantage, which also allows you to capture the RINs. So, again, there is some interplay there driven by the market dynamics.” (page 10).
- 2014-12-31 – Investor Update Presentation
 - “RIN prices elevated, so refiners motivated to sell ethanol blends from terminals” (page 15).
 - “Bottom Line: Elevated RINs accelerates rack price declines” (page 15).

Casey’s

- 2016-12-08 – Q2 2017 Earnings Call
 - “The second quarter margin benefited from the sale of renewable fueled credits, commonly known as RINs. During the quarter we sold \$17.8 million RINs or a total of \$15.9 million. This represented about \$0.03 per gallon improvement to the fuel margin.

RINs are currently trading around \$1.12. For comparison purposes, going forward, last year in the third quarter, the average RIN sold was approximately \$0.61.” (page 2).

- “[W]e’re fortunate I would say to be able to benefit from [the point of obligation] and due to our market, where we operate and the way we distribute our fuel.” (page 7).
- 2016-12-07 – 10-Q (for quarter ending October 31, 2016)
 - “The Company sold 17.8 million renewable fuel credits for \$15.9 million during the quarter, compared to 13.6 million fuel credits in the second quarter of the prior year, which generated \$4.7 million.” (page 12).
- 2016-09-07 – Q1 2017 Earnings Call
 - “Fuel margin was up about \$0.02 per gallon from the first quarter of last year due to a decline in the wholesale cost of fuel and a favorable environment for renewal energy credits resulting in a fuel margin of \$0.195 per gallon for the quarter. During this time, we sold approximately 17.9 million RINs at an average price of \$0.82. This represented about \$0.027 per gallon benefit to the fuel margin.” (page 2).
- 2016-09-06 – 10-Q (for quarter ending July 31, 2016)
 - “The gross profit margin per gallon increased (to \$0.195) in the first quarter of fiscal 2017 from the comparable period in the prior year (\$0.175) primarily due to elevated RIN values as well as a declining wholesale fuel cost environment in the current year.” (page 13).
- 2016-06-27 – 10-K (for fiscal year ending April 30, 2016) & 2016 Annual Report to Shareholders
 - “While the new volume requirements are lower than those originally set by Congress, we believe they could add support to renewable fuel credit values for the next several years.” (page 12 of the Annual Report).
- 2016-06-06 – Press Release - Q4 2016 - Casey’s Finishes Year with Record Earnings
 - “The Company sold 12.7 million renewable fuel credits for \$9.1 million in the fourth quarter. . . . The fuel margin remained strong throughout the year, aided in part by favorable renewable fuel credit values.” (page 1).

- 2016-03-07 – Press Release - Q3 2016 - Casey's Posts 28% Increase on Year-To-Date Net Income
 - "Fuel margins finished above goal for the third quarter due to elevated RIN values as well as a decline in wholesale fuel costs towards the end of the quarter." (page 1).

Couche-Tard

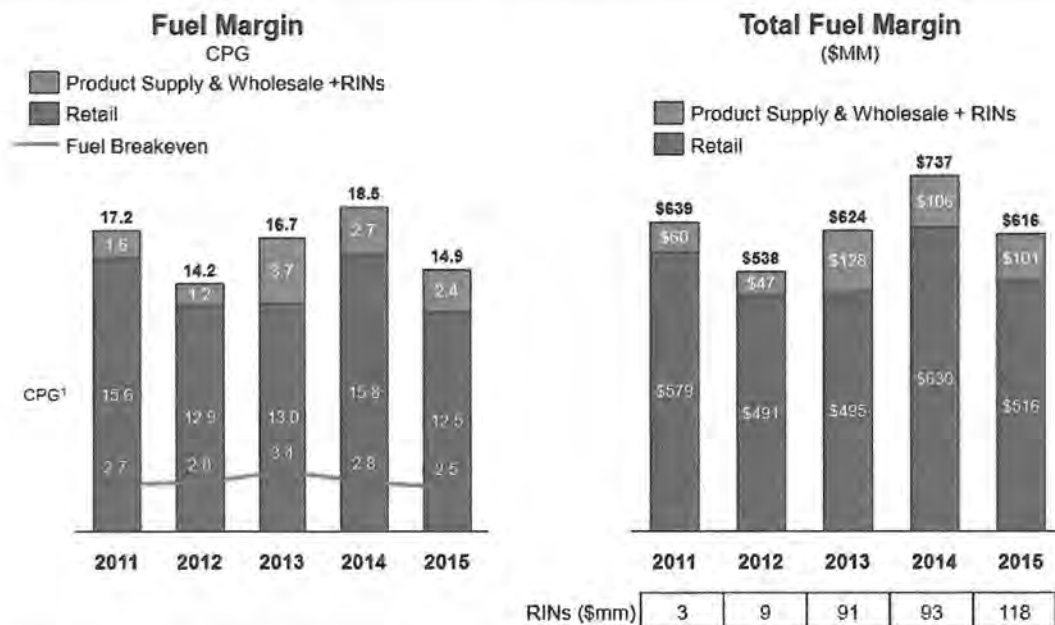
- 2016-11-22 – Q2 2017 Earnings Call
 - Speaker: Brian Hannasch, CEO; Hannasch: "In the U.S., we buy under a variety of structures including some where we get full RIN economics and some where we get partial RIN economics. From our standpoint it's impossible to quantify as you can never tell and I don't think anyone can tell how much is priced in any given rack, at any given time, which is how most of the industry would purchase fuel. However, if it does go away, it goes away for everyone and the markets will adjust and we'll focus on other ways to again establish and widen our competitive advantages on how we purchase fuel. That said, this rule cannot be changed by executive order. It does take full-blown rule making and judicial review for this rule to be changed, and from our perspective and the people we're talking to there's significant and very strong opposition by the American Petroleum Institute, all the major marketing groups, some of the automotive companies and the ethanol producers. So we're watching the issue closely. Again, it's difficult to quantify but at this point we're not overly concerned with the RIN issue." (page 6).
- 2016-08-30 – Q1 2017 Earnings Call
 - Speakers: Brian Hannasch, CEO & Claude Tessier, CFO; Tessier: "We got generally broader access to RINs in the U.S. than most of our competition. So as RINs increase in value we think that widens our competitive advantage and then finally we focus on the Categories. So we think we were widening what we believe it's a key competitive and sustainable advantage in the fuel space." (page 5).
 - Hannasch: "[W]e believe it's impossible to pinpoint exactly the value of RIN. It requires making assumptions about how much of the RIN value makes into wrap [ph] prices and another competitor deals and there is just no way of knowing of that. That said, we focus on having better supply deals than our competition and we think ACT on average has better access to RINs in the overall market. So as RIN values increase we think the advantages we have of having access to those RINs widens our supply advantage vis-à-vis competition, so in general we do like having a higher value RIN." (page 11).
- 2016-07-13 – Q4 2016 Earnings Call
 - Speaker: Brian Hannasch, CEO; Hannasch: "I think in our situation with our scale, I think we're in a position that we're able to capture a greater proportion of the value of the

RINs across our footprint than most of our competitors. So while it's hard to quantify the exact impact, we think we're advantaged vis-a-vis the industry when it comes to RINs, and that a higher RIN value is actually a positive for us vis-à-vis the industry, which is what I think is relevant. I'd also point out, we don't speculate on RINs. We do not try to pretend to know what direction they're going. So as we receive them, we sell them. So you shouldn't see a significant financial impact from a holding period on RINs." (page 9).

We know that EPA is sophisticated about how the market works, and clearly acknowledges in its justification for exercising its waiver authority that "the RIN is currently an inefficient mechanism for reducing the price for higher level ethanol blends at retail, and therefore unlikely to be able to significantly impact the supply of ethanol in the United States in 2016." 80 Fed. Reg. at 77,457.

This is illustrated perfectly by Murphy's in an investor presentation on March 21, 2016, in which it lays out exactly how it uses the RIN to increase fuel margins. The entire presentation is attached to these comments, but the chart below shows that the large retailers that capture the RIN add it to their bottom line. What's more, the large retailers make these huge profits on selling RINs for E-10, not E-85. Why change? There is no incentive to blend higher percentages of renewables, but there is an enormous economic incentive to have the E-10 blend wall broken so RIN prices move even higher. This is happening, and EPA acknowledges this in its justification for using waiver authority.

PS&W plus RINs consistently adds to total fuel contribution



1) CPG based on retail volumes; before corporate overhead

Murphy USA Inc.

12

-14-

This is further supported in a recent study by Ramon Benavides, President of Global Renewable Resources.¹³ The study is attached as part of the record with this comment. Benavides analyses the ways in which large retailers are able to double their margins by selling RINs. The paper focuses on Pilot/Flying J and Love's because of the considerable amount of information they make public. But it is not an indictment of those companies; it is simply a study of what is happening in the retail market.

The study uses the Estimated Margin Indicator ("EMI") to ascertain fuel margins for the two companies. The EMI demonstrates that Pilot/Flying J and Love's margins exceed the National Association of Convenience Stores ("NACS") average of \$.189 cents by nearly double. This is because these companies enjoy a strong financial advantage over companies that distribute and sell petroleum fuels. The ultimate effect could be selective losses in market share for smaller, less sophisticated market participants.

Benavides concludes:

While the entire EMI is available in Appendix One, a summary of the results for both Pilot/Flying J and Loves follow. In both instances, these entities' combined gross profits are almost twice as high as the national average. Furthermore, a pass-through to customers did not occur, as additional RIN-derived margins are retained by large fuel retailers as profits. To the contrary, small fuel retailers, which do not have access to similar margins, are likely to lose market share as a result. If the Environmental Protection Agency ("EPA") were to alter the point-of-obligation under the Renewable Fuel Standard ("RFS"), small fuel retailers would be considerably more likely to be able to achieve price parity with large fuel retailers and sustain operations in local markets that continue to thrive based in substantial part on robust retail competition.

In our amicus brief to the D.C. Circuit Court of Appeals, we cited a report by Dr. Bernard L. Weinstein (Associate Director, Southern Methodist University Maguire Energy Institute) that supports these conclusions:

The bias against small retailers has serious implications for their long-term survival because the current regulatory regime governing RINs trading allows large fuel marketers and large retailers to gain revenues and a competitive advantage over small retailers. Reports indicate that large retailers are using the RIN profit stream for retail expansion and acquiring a larger share of a limited market. Small retailers are losing both sales volume and stores to large retailers. In other words, small retailers aren't just less profitable but they

¹³ See Ramon M. Benavides, *Renewable Fuel Incentives: Estimation of Large Retailers' Margins* (Feb. 2017), available at http://smallretailerscoalition.com/wp-content/uploads/2017/02/Renewable-Fuel-Incentives_Estimation-of-Large-Retailers-Profits.pdf.

are going out of business due to their growing inability to compete with large retailers. As a result, the demise of small “mom-and-pop” fueling stations has accelerated, with more than 12,000 closing since 2007.¹⁴

Dr. Weinstein further updated his report in February of this year after reviewing EPA’s Proposed Denial and analyzing the impacts that a denial would have on small retailers. He outlines in great detail how EPA’s apathy here will drive small retailers out of business and creates a \$30-billion-a-year incentive for unobligated blenders to blend E-10 and nothing more.

Our Plea – Grant the Petition to Move the Point of Obligation

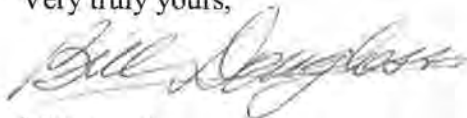
The era of the large, non-obligated, RIN-rich retailer dominating the market is underway. If the EPA does not move the point of obligation to the rack, small retailers will have little choice but to close or sell-out to the non-obligated, RIN-rewarded large retailers. We hope that you take the information that we have submitted to heart, but we encourage you to also do your own research. Go out and ask retailers, small and large, for copies of their fuel contracts to see how the system really works. We are prevented by anti-trust laws from providing you our members’ contracts, but you can get them. See what the market reality is particularly for the branded retailer. Please do not base your decision on the unsupported statements of the beneficiaries of the system.

America needs and depends on small and medium retailers for up to 75 percent of its fuel needs. Don’t shut us down for the benefit of approximately 50 mega-companies. History shows that oligopolies are not good for distribution of goods or for customer choice. All we are asking is a level playing field upon which to compete.

I close by offering that I, or a member of the SRC, will come to Washington to meet, to answer questions and provide anecdotes or more market data. We will provide any additional information you need. Hopefully, several of our members will also write to you to share their personal stories. We want to sell renewable fuels! But the current point of obligation is simply closing us down.

Please stop this RINsanity and let us compete in a fair, unbiased market.

Very truly yours,



Bill Douglass

¹⁴ See Bernard L. Weinstein, Renewable Identification Numbers (RINS) Trading Under the Renewable Fuels Program: Unintended Consequences for Small Retailers 6 (Aug. 2016) (report for Southern Methodist University Maguire Energy Institute), available at <http://smallretailerscoalition.com/wp-content/uploads/2016/08/SMU-Retailer-RINS-analysis-8-17-1.pdf>.

To: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
Cc: Jackson, Ryan[jackson.ryan@epa.gov]; Black, Noel W.[NWBLACK@southernco.com]
From: Horton, Melissa H.
Sent: Mon 6/5/2017 3:35:38 PM
Subject: RE: Cell

Great! Please use Conf. Call # Ex. 6 - Personal Privacy Access Code: Ex. 6 - Personal Privacy

-----Original Message-----

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Monday, June 05, 2017 10:33 AM
To: Horton, Melissa H. <MHIGGINS@southernco.com>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Black, Noel W. <NWBLACK@southernco.com>
Subject: RE: Cell

Yes - that will work. Do you have a call-in number?

-----Original Message-----

From: Horton, Melissa H. [mailto:MHIGGINS@southernco.com]
Sent: Monday, June 5, 2017 11:18 AM
To: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Black, Noel W. <NWBLACK@southernco.com>
Subject: RE: Cell

Hi Mandy. I'm working with Noel on this meeting. I set up a call for us to speak today at 2pm. Let me know if this works. Thank you!

Melissa

-----Original Message-----

From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
Sent: Friday, June 02, 2017 7:55 PM
To: Black, Noel W. <NWBLACK@southernco.com>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>; Horton, Melissa H. <MHIGGINS@southernco.com>
Subject: Re: Cell

Hey Noel,

Sorry it's been hard to connect. The date is set for June 19 starting at 1 pm at EPA HQ.

I hate to call now as I hope you've started your weekend. Does it work to connect early on Monday?

Best,
Mandy

Sent from my iPhone

> On Jun 1, 2017, at 11:13 AM, Black, Noel W. <NWBLACK@southernco.com> wrote:
>
> Mandy,
>
> Running down the 19th. Fanning is not available but our COO Kim Greene is available...She has been very involved in the Kemper County Lignite Facility. Do you have a time and place?
>
> Also when you have a moment give me a call...a couple of other questions.
>

> Thanks, Noel Black
> Vice President
> Federal Regulatory Affairs
> Southern Company
> 202.261.5024 office
> Ex. 6 - Personal Privacy mobile
>
>
> -----Original Message-----
> From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
> Sent: Wednesday, May 31, 2017 10:37 AM
> To: Jackson, Ryan; Black, Noel W.
> Subject: RE: Cell
>
> Hey Noel, Following up from our phone call below is the list of confirmed and tentative/invited attendees. I'll update as appropriate. Let me know if you have any follow-up questions.
>
> Confirmed:
> Nick Akins, AEP
> Gerry Anderson, DTE
> Warner Baxter, Ameren
> Pat Vincent-Collawn, PNM
> Chris Crane, Exelon
> Leo Denault, Entergy
> Tom Farrell, Dominion
> Ben Fowke, Xcel
> Lynn Good, Duke
> Sean Trauschke, OGE
>
>
> Invited:
> Southern Co.
> NRECA (top 3 to 5)
> Basin
> TRI-State
> APPA (top 3 to 5 from Cory)
> TVA
> LGE-KU
> LPPC
> Luminant
>
>
> -----Original Message-----
> From: Jackson, Ryan
> Sent: Wednesday, May 31, 2017 6:33 AM
> To: Black, Noel W. <NWBLACK@southernco.com>
> Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>
> Subject: Re: Cell
>
> Noel, we wanted to see if your CEO or appropriate representative could join a round table with the Administrator on June 19 at 1pm in EPA for a couple hour stakeholder meeting with the Administrator on next steps after the CPP.
>
> We are happy to talk further on this. Much appreciated.
>
> Ryan.

>
>
> Ryan Jackson
> Chief of Staff
> U.S. EPA
> Ex. 6 - Personal Privacy
>
>> On May 30, 2017, at 10:21 PM, Black, Noel W. <NWBLACK@southernco.com> wrote:
>>
>> Mandy,
>>
>> Just seeing this my apologies.
>>
>> My cell is Ex. 6 - Personal Privacy
>>
>> I'll give you a call in the morning.
>>
>> Looking forward to talking.
>>
>> Thanks, Noel
>> Southern Company
>> Ex. 6 - Personal Privacy
>>
>> Please excuse any typos...this is coming from my iPhone.
>>
>> On May 30, 2017, at 8:09 PM, Gunasekara, Mandy
>> <Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov>> wrote:
>>
>> Hey Noel,
>>
>> I hope you are well. What's the best number to reach you? We are setting up the CEO utility round
table with the Administrator for June 19th at EPA and we'd love Mr. Fanning to attend.
>>
>> Give me a call when you have a sec Ex. 6 - Personal Privacy
>>
>> Best,
>> Mandy
>>
>> Sent from my iPhone

To: Lyons, Troy[lyons.troy@epa.gov]; Greenwalt, Sarah[greenwalt.sarah@epa.gov]; Rees, Sarah[rees.sarah@epa.gov]; Jackson, Ryan[jackson.ryan@epa.gov]; Benton, Donald[benton.donald@epa.gov]; Pruitt, Scott[Pruitt.Scott@epa.gov]; Schwab, Justin[schwab.justin@epa.gov]
Cc: 'John Hall'[jhall@hall-associates.com]
From: Telford Borough
Sent: Wed 6/7/2017 7:22:48 PM
Subject: Call to Action letter
[Ex. 1 - Endpoint Report - Follow up Analysis.pdf](#)
[Ex. 2 - EPA-SAB-Peer Review Rpt.pdf](#)
[Ex. 4 - Dodds Report.2006.pdf](#)
[Ex. 5 - SAB Lake Erie Peer Review.pdf](#)
[Letter to EPA Admin Pruitt - Peer Review of Nutrient Endpoint Document - 6-6-17.pdf](#)
[Transmittal Letter to PA Congressmen - 6-6-17.pdf](#)
[Ex. 3 - Everett Memo - PaDEP 2002.pdf](#)

Dear Administrator Pruitt,

On behalf of the Southeastern Pennsylvania Nutrient Coalition, I submit a request for Peer Review of EPA Region 3's TMDL Nutrient Endpoint Report. We believe this EPA document creating stringent nutrient reduction requirements for Eastern PA waters is not scientifically defensible and will misallocate millions of dollars in municipal funds toward unnecessary construction of wastewater and stormwater facilities. These types of regulatory decisions should be peer reviewed. We have asked our Senators and Congressmen to address this very important issue with you and your office staff as well. Thank you for your consideration in this critical matter and I look forward to your favorable response.

Sincerely,

Mark D. Fournier

Borough Manager

Telford Borough, PA

Development of Nutrient Endpoints for the Northern Piedmont Ecoregion of Pennsylvania: TMDL Application Follow-up Analysis

Prepared for
United States Environmental Protection
Agency
Region 3
Philadelphia, PA

Prepared by
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18 July 2012

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1. INTRODUCTION

The United States Environmental Protection Agency (USEPA) in Region 3 continues to oversee the development of nutrient TMDLs to protect aquatic life use for several streams in the Northern Piedmont ecoregion of southeastern Pennsylvania. Tetra Tech, Inc (Tt) was contracted to establish appropriate and defensible TMDL endpoints for nutrients that protect aquatic life uses in this ecoregion. For that original work Tt developed TMDL endpoints using a multiple lines of evidence approach consistent with USEPA guidance (USEPA 2000a, 2000b) that included reference distribution based, stressor-response based, and scientific literature based evidentiary lines and which were reported to USEPA (Paul and Zheng 2007).

In 2010, USEPA published revised guidance for conducting stressor-response analyses in support of nutrient criteria derivation (USEPA 2010). In response to that revision, Tt was asked to conduct additional analyses in support of the original report and to recommend values associated with the additional analyses that may be considered with the original lines of evidence in revising the TP endpoints. It is important to note that this report does not replace the original analysis, but rather adds to it. In particular, no additional reference distribution based endpoints are being derived, and only one additional piece of scientific literature is being added that was published subsequent to the original report and may have relevance for this region. Lastly, results from a mechanistic model of Indian Creek targeting specific algal endpoints are being included in this report as an additional line of evidence.

2. REVISED GUIDANCE

The revised guidance lays out a 4 step process (Figure 1) which was essentially followed in the original analysis: developing a conceptual model, assembling and exploring the data, analyzing the data to derive candidate criteria, and reviewing and documenting the analysis. This document begins with a discussion of the conceptual model in more detail following the 2010 guidance. It then skips the second step since no additional data were added and the data

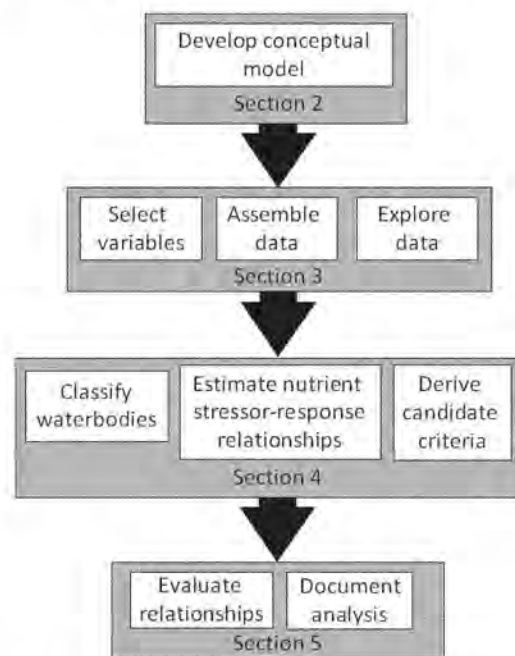


Figure 1- Steps in stressor-response analysis (USEPA 2010).

selection, assembly, and exploration, covered in the original document, remain unchanged. Step 3 is the principal focus of the document, explaining and reporting on the additional analyses conducted. This report satisfies step 4's element related to documenting the analysis.

Ultimately, the stressor-response modeling efforts are conducted to identify a nutrient threshold to protect Piedmont stream macroinvertebrates from nutrient impacts. It is preferable that this be done in a way that is not confounded by other stressors, which could result in errors in estimating a protective nutrient concentration, and the USEPA (2010) provided guidance to better achieve this goal. It is well known that certain sources, for example urbanization, produce a range of stressors, including, but not limited to, nutrients that can affect aquatic life in streams. The revised conceptual model effort in this report builds off the original conceptual model and attempts to identify other stressor pathways by which the response variable could be impacted by the dominant stressors sources in the watershed and ecoregion. This is done, in part, to help guide the consideration of other stressors for modeling so the unique effect of nutrients on responses relative to the other stressors could be better estimated. After identifying potential additional stressors with the conceptual model, their relationship to both nutrients and responses was estimated with correlation analysis. Multiple regressions were then conducted to compare the predictive strength of these different stressors and evaluate how significant nutrients remained. Finally, sites were classified into dominant stressor source classes to better isolate the unique effect of nutrients on the response and estimate a more appropriate and protective nutrient concentration for protecting aquatic life in Piedmont streams.

3. CONCEPTUAL MODEL

Nutrients affect aquatic systems in diverse ways, and the effects on most non-primary producer aquatic life uses are indirect. The original ecoregional TMDL analysis was based on a simplified conceptual model that was, nonetheless, used to “depict accepted scientific knowledge regarding the effects of nitrogen/phosphorus pollution in surface waters” (USEPA 2010) and thereby reinforce the presumptive causal relationship and guide the analysis (Figure 2).

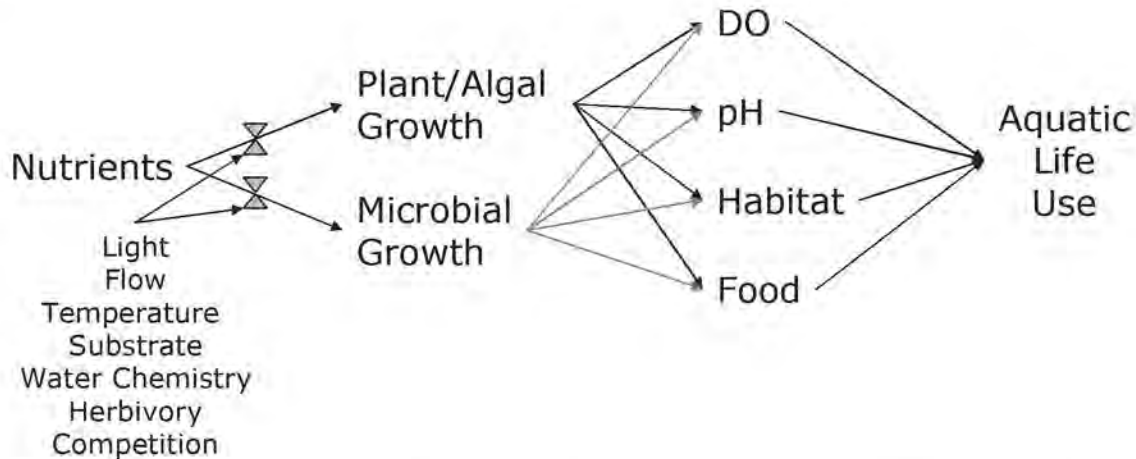


Figure 2 – Simplified diagram illustrating the causal pathway between nutrients and aquatic life use impacts (Paul and Zheng 2007).

The revised guidance provides a more detailed conceptual model that can be adapted for similar application (Figure 3). Blue boxes indicate primary elements relevant to the current analysis. Specifically detailed are the dominant urban point and non-point pollutant sources generating nutrient stressors (orange box), as well as stressors that co-occur with nutrients such as sediment, flow, and toxics arising from similar sources that may confound the stressor-response analyses. The model is consistent with the presumptive causal model presented earlier and the guidance reviews the substantial literature in support of the causal linkages (USEPA 2010). An essential insight from the causal model in Figure 3 is the identification of alternate potential stressors that co-vary with nutrients such as flow, sediment, and toxics data. If available, these should be evaluated for their potential to confound results. As explained above, these other variables have negative effects on macroinvertebrates, their co-occurrence with nutrient stressors could interfere with the nutrient response and this needs to be evaluated to the extent possible. Toxics data were not available within the ecoregional dataset, so conductivity was used as a surrogate for other dissolved pollutants. Also, habitat data were considered to control for the confounding effect of sediment and scouring on habitat mediated impacts on macroinvertebrates. The goal of subsequent analyses, therefore, was to consider and account for some of these covariate effects.

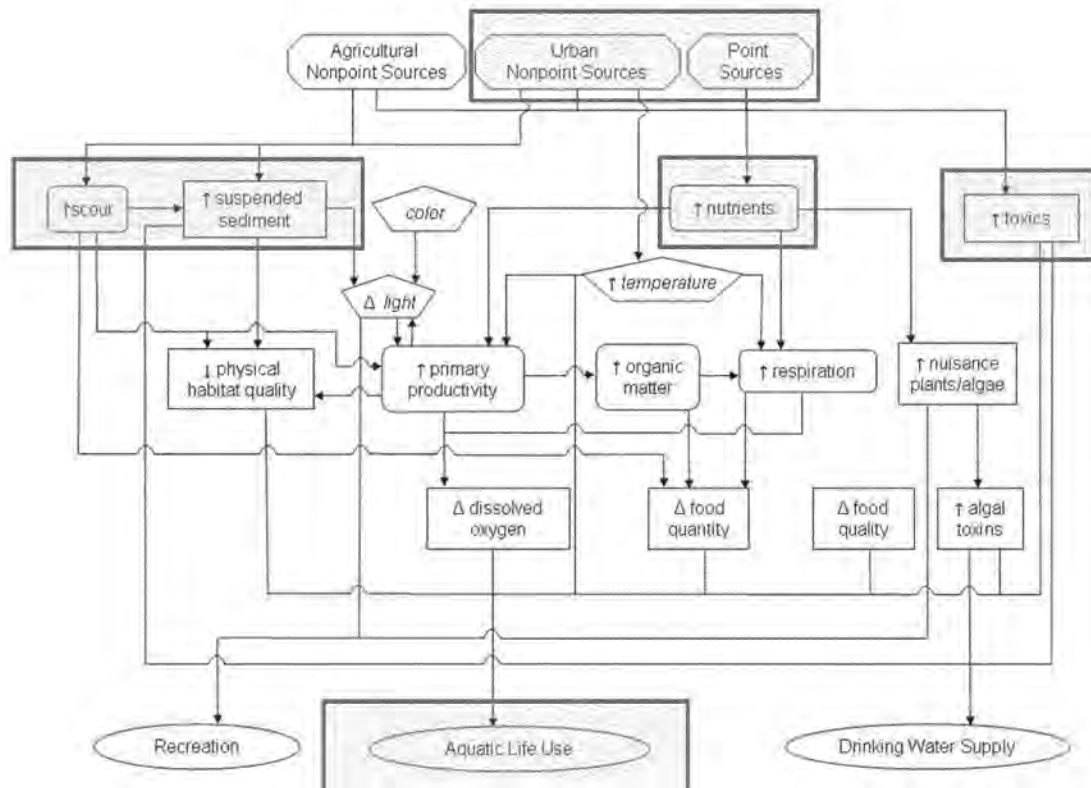


Figure 3 - More detailed conceptual model of the causal relationship between nutrients and responses in streams (after USEPA 2010)

In the original empirical models, biological metrics from the Maryland Biological Stream Survey (MBSS) piedmont index were used since this was the most substantial dataset available for the piedmont ecoregion (MDNR 2005). Since the goal of the analysis was to identify thresholds inimical to aquatic life, these data were appropriate. Also, absent specific numeric aquatic life use endpoints for these metrics in Pennsylvania, the middle of the MBSS index and component metric scoring ranges were used as response goals in the regression models, where such endpoints were needed. For example, the median of the Ephemeroptera, Plecoptera, and Trichoptera (EPT) taxa richness metric scoring range was 8 taxa (MDNR 2005), this is the midpoint between poor and good scores for this metric in the MBSS index and was used as the response target in the regression models below. Higher, more stringent targets could have been developed to assure greater likelihood of protection, but this value was defensible as a mid-range threshold. These middle values were also between the 10th and 50th percentile of MBSS piedmont reference site biological metric values, which is consistent with thresholds commonly used for defining biological targets and within the range ultimately proposed by Pennsylvania Department of Environmental Protection (PADEP) for their own evolving macroinvertebrate index (Barbour et al. 1999, PADEP 2009).

The metrics selected by MBSS for their piedmont ecoregion index include the number of taxa, number of EPT, the number of Ephemeroptera taxa, the percent of individuals of intolerant urban taxa, the percent of individuals that are chironomids, and the percent of

individuals classified as clingers. The PADEP (2009) used similar metrics: number of taxa, number of EPT taxa, Beck's index, Shannon diversity, Hilsenhoff's biotic index, and the percent individuals from intolerant taxa.

4. DATA ANALYSIS – CORRELATIONS

The goal of this subsequent analysis was to evaluate the effects of confounding or covarying stressors on nutrients, to attempt to refine the analysis to account for those effects, and to document the results. One approach recommended in the revised USEPA guidance was to attempt to classify the data into bins or classes of similar covariate distributions to control for the effects of these covariates and isolate, as much as possible, the independent effect of nutrients. This was attempted in two ways: propensity scores and manual binning.

Propensity score analysis is explained in the guidance (USEPA 2010) and is an analytical approach that controls for the effects of covariates by using them to generate predicted nutrient concentrations, called propensity scores, whose predicted value is a function of the covariation. Propensity scores are then split into several bins, within which the approximate distribution of covariates is similar and the effects of nutrients can be independently evaluated. The first step in the analysis is identifying nutrient covariates. A correlation analysis between nutrients and other likely stressors was conducted. Data were standardized to the mean and standard deviation of all values and log-transformed as necessary beforehand to meet assumptions of constant variance for the correlation, multiple regression, and principal components analysis. Those analyses were performed using Statistica software. This standardization allowed for an equal comparison of variable effects independent of differences in magnitude and range, which helped these analyses. For the simple linear regression model to estimate TP endpoints, however, \log_{10} -transformed TP concentrations were used as in the original report.

Little or no correlation between nutrients and other stressors, both chemical and physical, was observed. Highest correlations with TN were with DO (positive), sulfate (negative), and flow (positive). With TP, the highest correlations were with turbidity (positive), sulfate (positive), embeddedness (positive), and epibenthic substrate habitat (negative). These results are consistent with a covarying effect of nutrients and sediment, but were insufficiently strong to recommend propensity score analysis.

Table 1 – Correlation matrix among physical and chemical variables in the MBSS dataset used. Values highlighted in blue were significantly correlated ($p < 0.05$ and $r > |0.5|$)

Spearman Rank Order Correlations												
Variable	Nitrate	Total Nitrogen	Total Phosphorus	Dissolved Oxygen	pH	Conductivity	Sulfate	Turbidity	Instream	EPI Substrate	Embedded	Flow
Nitrate		0.968	0.061	0.248	-0.099	-0.081	-0.236	-0.027	0.015	0.061	-0.080	0.130
Total Nitrogen	0.968		0.099	0.239	-0.109	-0.070	-0.220	-0.011	0.002	0.043	-0.077	0.142
Total Phosphorus	0.061	0.099		-0.059	0.051	0.120	0.269	0.283	-0.145	-0.194	0.231	0.128
Dissolved Oxygen	0.248	0.239	-0.059		-0.029	-0.130	-0.181	-0.234	0.209	0.293	-0.193	0.232
pH	-0.099	-0.109	0.051	-0.029		0.546	0.518	-0.141	0.162	0.049	0.115	0.274
Conductivity	-0.081	-0.070	0.120	-0.130	0.546		0.730	-0.065	-0.205	-0.255	0.263	-0.112
Sulfate	-0.236	-0.220	0.269	-0.181	0.518	0.730		0.001	-0.182	-0.236	0.213	-0.034
Turbidity	-0.027	-0.011	0.283	-0.234	-0.141	-0.065	0.001		-0.101	-0.156	0.163	0.138
Instream	0.015	0.002	-0.145	0.209	0.162	-0.205	-0.182	-0.101		0.308	-0.423	0.512
EPI Substrate	0.061	0.043	-0.194	0.293	0.049	-0.255	-0.236	-0.156	0.308		-0.571	0.339
Embedded	-0.080	-0.077	0.231	-0.193	0.115	0.263	0.213	0.163	-0.423	-0.571		-0.109
Flow	0.130	0.142	0.128	0.232	0.274	-0.112	-0.034	0.138	0.512	0.339	-0.109	

Correlations in blue are more than or less than 0.5

Missing data is deleted pairwise

Given the weak correlation between nutrients and other stressors, and essentially only weak covariation, it was decided that propensity score analysis was not necessary. However, correlations between biological responses and stressors other than nutrients were evident (Table 2). As a result, it was felt that it was still necessary to attempt to tease apart the effect of nutrients after controlling for other stressors. This was done in two different ways.

Table 2 – Correlation matrix between physical and chemical variables and the biological metrics that compose the MBSS Piedmont multimetric index. Values highlighted in red were significantly correlated.

Spearman Rank Order Correlations												
Variable	Nitrate	Total Nitrogen	Total Phosphorus	Dissolved Oxygen	pH	Conductivity	Sulfate	Turbidity	Instream	EPI Substrate	Embedded	Flow
Intolerant Urban %	0.137	0.104	-0.266	0.235	-0.393	-0.612	-0.522	-0.164	0.247	0.371	-0.345	-0.086
Chironomid %	-0.082	-0.058	0.147	-0.232	0.284	0.483	0.373	0.200	-0.231	-0.332	0.300	0.007
Clinger %	0.093	0.057	-0.183	0.242	-0.212	-0.448	-0.351	-0.218	0.327	0.412	-0.353	0.075
Total Taxa	0.242	0.225	0.022	0.058	-0.250	-0.389	-0.411	0.025	0.111	0.138	-0.077	0.051
EPT Taxa	0.270	0.239	-0.159	0.263	-0.286	-0.553	-0.492	-0.171	0.289	0.383	-0.328	0.089
Ephemeroptera Taxa	0.286	0.263	-0.107	0.257	-0.231	-0.569	-0.434	-0.081	0.240	0.302	-0.238	0.112

Correlations in red are significant at $p < 0.05$

Missing data is deleted pairwise

The first was through the use of multiple regression models to compare and explore the contributory effects of different stressors simultaneously and the second was through binning sites by urban intensity, which will be discussed in sections 5 and 6.

5. DATA ANALYSIS – MULTIPLE REGRESSION

Multiple linear regression (MLR) models were generated to predict invertebrate metric scores across MBSS piedmont sites using forward stepwise selection (F to enter = 4). This analysis was intended to compare stressor predictors and identify and support the basis for the independent effects of nutrients in this multi-stressor environment.

Simple linear regression is a statistical method that generates a predictive empirical model that estimates the effect of a single predictor (e.g., nutrients) on a response variable (e.g., a benthic metric). Alternatively, one may believe that multiple predictors (e.g., sediment and nutrients) influence the response variable and one can construct a model that predicts the effect of many variables on the response simultaneously. In these multiple regression models, then, the resultant model identifies more than one predictor to estimate a response condition. Various statistical methods exist that guide selection of the order of predictors in a multiple regression model. For this expression, a forward stepwise procedure was used, which adds predictors to a model based on the significance of their effect on the response. The most significant effect is added first, then the model compares the significance of the remaining predictors and adds the one providing the second most significant prediction, and so on until no additional predictors that meet the significance requirement for entry in the model are identified. The result is a multiple predictor model that predicts the responses. Multiple regression modeling allows one to compare the significance of different predictors, but it was also used here to verify the continued significance of nutrient predictors after accounting for other stressors on macroinvertebrates, which was important in continuing to argue for the importance of nutrients to invertebrate responses. For the intolerant percent urban individual taxa metric, MLR models still included TP as a significant negative predictor in the model (Tables 3 and 4); in fact, TP was the second most predictive variable after conductivity. Conductivity is a frequent stressor associated with urbanization and was highly correlated with pH. Other predictors included turbidity, flow, and habitat conditions, but the latter all explained less additional variance than TP.

The other metric for which TP entered an MLR as a significant predictor was for Ephemeroptera taxa (Tables 5 and 6). In this case, TP explained less variance than for intolerant percent urban taxa, but TP had a significant negative effect on the model prediction.

These results strengthen the argument for an independent effect of TP on macroinvertebrate taxa in Piedmont streams that is consistent with the causal conceptual model presented in the original report and the updated model presented above. There are several variables that contribute to predicting invertebrate declines in the Piedmont, but TP is defensibly one of them. The next analysis attempts to develop TP thresholds while controlling for these other stressors and focused specifically on urban effects and binning sites by urban intensity.

Table 3 - MLR model summary of stepwise regression for the intolerant percent urban invertebrate metric.

Regression Summary for the Dependent Variable of Intolerant Urban %						
	b*	Standard Error of b*	b	Standard Error of b	t(330)	p-value
Intercept			27.139	1.912	14.195	0.00000
Conductivity	-0.499	0.049	-14.854	1.459	-10.182	0.00000
Total Phosphorus	-0.139	0.043	-4.251	1.308	-3.249	0.00128
Turbidity	-0.157	0.042	-4.637	1.255	-3.694	0.00026
Flow	-0.198	0.047	-10.666	2.500	-4.266	0.00003
EPI Substrate	0.221	0.047	6.604	1.404	4.702	0.00000
pH	-0.101	0.049	-3.026	1.477	-2.049	0.04123
R= .69996489 R ² = .48995084 Adjusted R ² = .4806772						
F(6,330)=52.833 p<0.0000 Standard Error of estimate: 21.445						
N=337						

Table 4 - MLR model summary of stepwise addition for the intolerant percent urban invertebrate metric.

Summary of Stepwise Regression of Intolerant Urban%							
Variable	Step	Multiple R	Multiple R-square	R-square change	F - to remove	p-value	Variables
Conductivity	1	0.576	0.332	0.332	166.171	0.00000	1
Total Phosphorus	2	0.631	0.398	0.066	36.785	0.00000	2
Turbidity	3	0.656	0.430	0.032	18.633	0.00002	3
Flow	4	0.672	0.451	0.021	12.914	0.00038	4
EPI Substrate	5	0.695	0.483	0.032	20.713	0.00001	5
pH	6	0.700	0.490	0.006	4.199	0.04123	6

Table 5 - MLR model summary of stepwise regression for the Ephemeroptera taxa invertebrate metric.

Regression Summary for the Dependent Variable Ephemeroptera Taxa						
	b*	Standard Error of b*	b	Standard Error of b	t(332)	p-value
Intercept			2.779	0.102	27.201	0.00000
Conductivity	-0.531	0.043	-1.261	0.103	-12.232	0.00000
Total Nitrogen	0.206	0.044	0.508	0.109	4.650	0.00000
Dissolved Oxygen	0.112	0.044	0.279	0.110	2.536	0.01166
Total Phosphorus	-0.090	0.044	-0.220	0.107	-2.063	0.03985
R= .62131600 R ² = .38603357 Adjusted R ² = .37863639						
F(4,332)=52.187 p<0.0000 Std. Error of estimate: 1.8712						
N=337						

Table 6 – MLR model summary of stepwise addition for the Ephemeroptera taxa invertebrate metric.

Summary of Stepwise Regression of Ephemeroptera Taxa							
Variable	Step	Multiple R	Multiple R-square	R-square change	F - to remove	p-value	Variables
Conductivity	1.000	0.565	0.319	0.319	156.770	0.00000	1.000
Total Nitrogen	2.000	0.604	0.365	0.046	24.038	0.00000	2.000
Dissolved Oxygen	3.000	0.615	0.378	0.014	7.302	0.00724	3.000
Total Phosphorus	4.000	0.621	0.386	0.008	4.258	0.03985	4.000

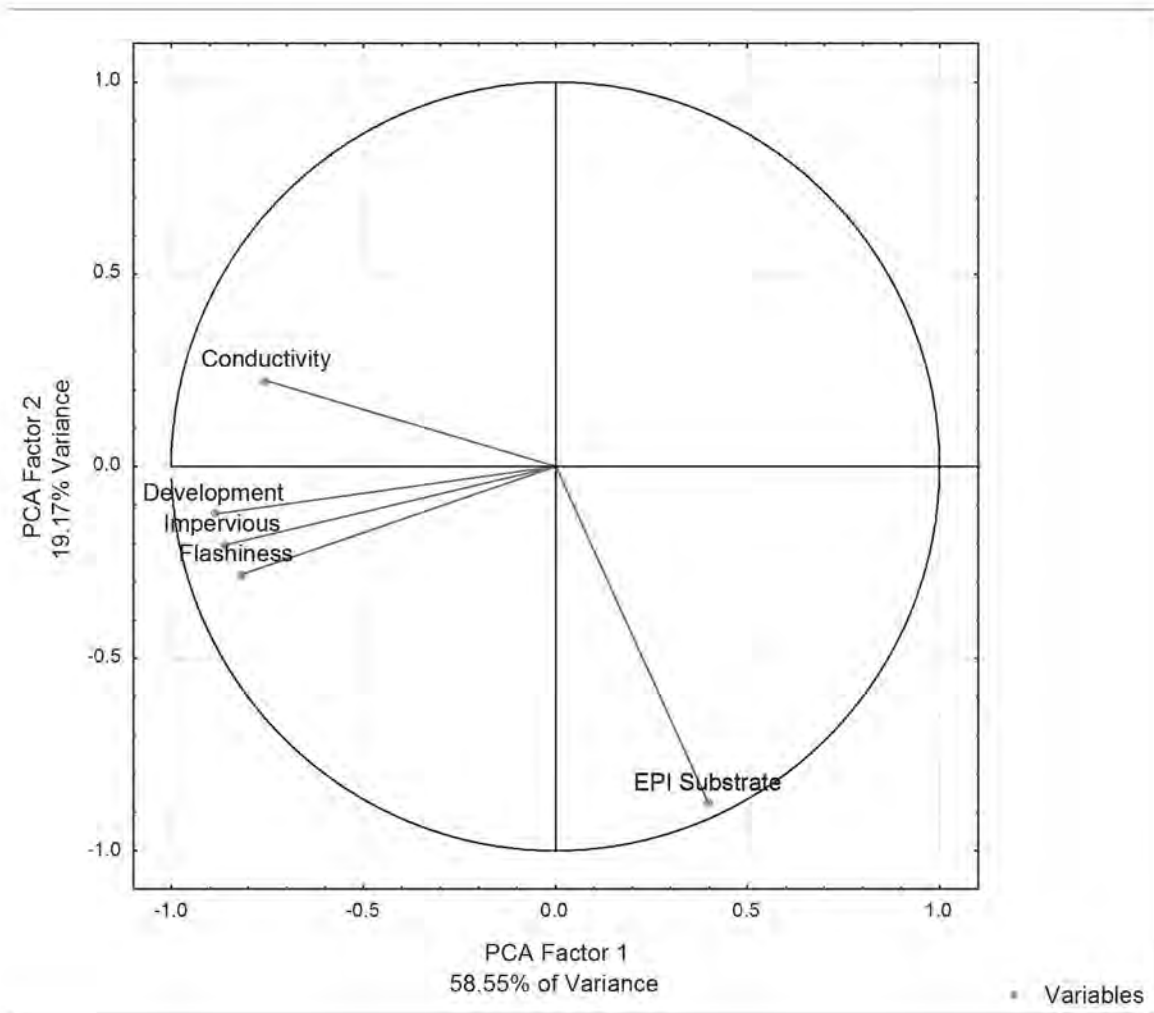
6. DATA ANALYSIS – REGRESSION WITHIN BINS

There was substantial evidence that, in this ecoregion, urbanization was associated with several stressors including nutrients and TP, consistent with the conceptual model. This is likely due to both point and non-point TP sources that have been demonstrated to deliver this particular pollutant. The conceptual model identifies some of these – namely flow alteration, sediment, and other toxics. Fortunately, variables related to these stressors were available and many were used in the MLR demonstration above to verify the independent significant effect of nutrients in the presence of these multiple stressors.

The ultimate goal of this analysis was to strengthen the defensibility of TP threshold concentrations developed to protect aquatic life in Piedmont streams for the purposes of TMDL modeling. A concern, indicated above, was that other stressors may be confounding the ability to identify the most defensible endpoints. One element that became clear during the analysis was that urbanization may actually be responsible for several stressors that co-occur with nutrients, likely impact invertebrates as well as nutrients, but may be confounding the ability to create the clearest model of nutrient response for the purposes of developing a TP target to protect aquatic life. Conceptually, if the impact of these urban stressors could be isolated and/or reduced, then a clearer model of nutrient response could be developed and TP thresholds identified for the target aquatic life use endpoints when these confounding effects were minimized. Such approaches are recommended in the new stressor-response guidance (USEPA 2010). Therefore, an attempt was made to identify the urban effect and focus on identifying a gradient minimally impacted by these co-occurring urban stressors. The first step was to identify the urban gradient and this was addressed with principal component analysis.

A principal components analysis (PCA) was used to construct a model that created a predominantly urban gradient (Figure 4). PCA is a multivariate analysis that reduces the variance among multiple factors into a few dimensions associated with the dominant gradients. Only the first principal component was used since it represented the majority of the variance (59%) and was associated with urbanization (e.g., imperviousness, conductivity, development, and flashiness). Given the orthogonal effect of the habitat metric to urbanization, it was removed, and a second PCA was conducted to construct the

final urban gradient, the first axis of this second PCA explained 70% of the variability in the



data (Figure 5).

Figure 4 - Plot of first two principal components generated indicating axis 1 was associated with the principal urban factors related to water chemistry (conductivity), flow alteration, and overall urbanization (LDI scores and imperviousness). Habitat condition was predominantly orthogonal to the principal urban stressors. The percent value indicates how much of the variance in the data is explained by each axis.

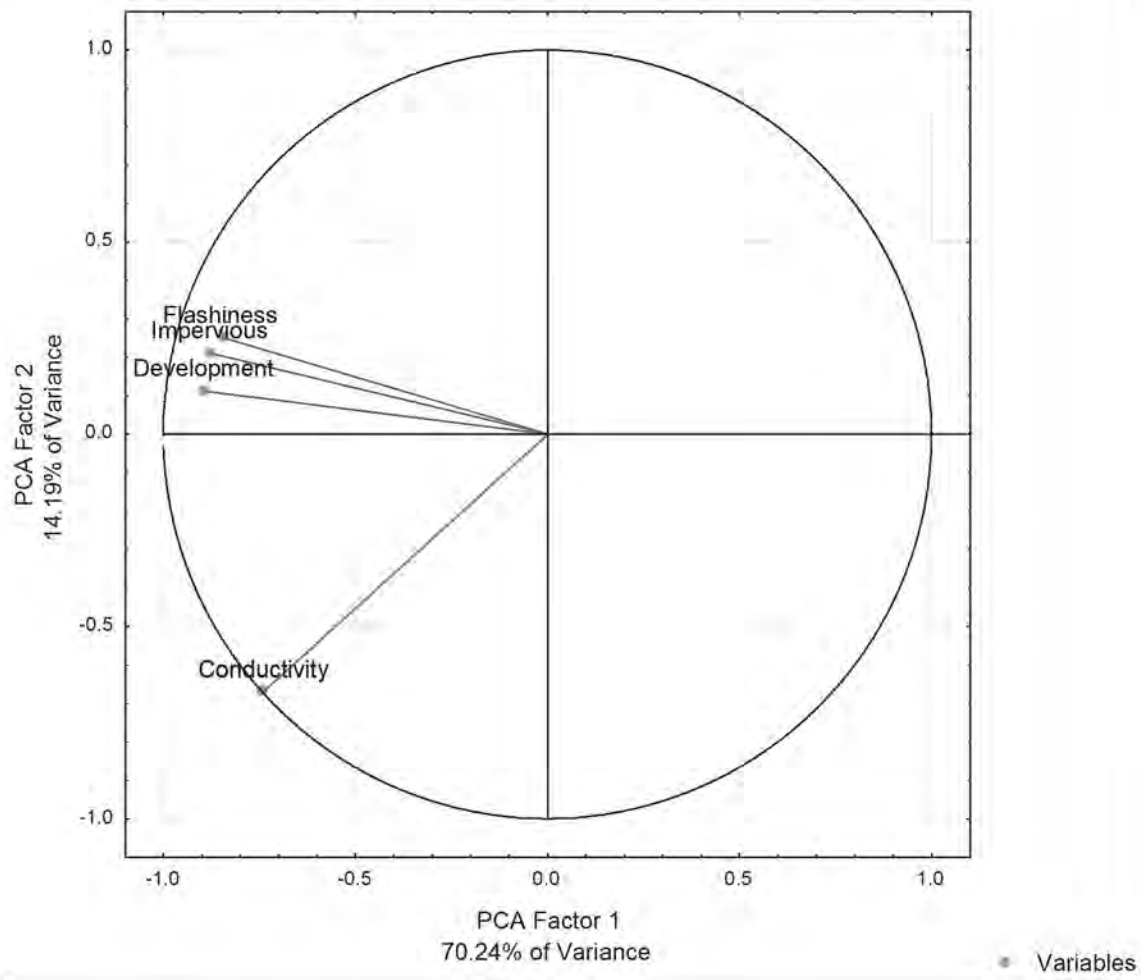


Figure 5 - Plot of first two principal components generated from second PCA indicating axis 1 was again associated with the principal urban factors related to water chemistry (conductivity), flow alteration, and overall urbanization (LDI scores and Imperviousness).

The first axis of the second PCA was split into 3 equal sized bins from group 1 (highest third of principal component axis 1 values, least urban) to group 3 (lowest third of principal component axis 1 values, most urban). Total phosphorus concentrations overlapped across the three groups, but central tendencies were highest for groups 2 and 3 (Figure 6). The bin groups were used to color-code the sites in plots of TP versus EPT taxa richness and percent intolerant urban taxa, two of the metrics more strongly related to TP.

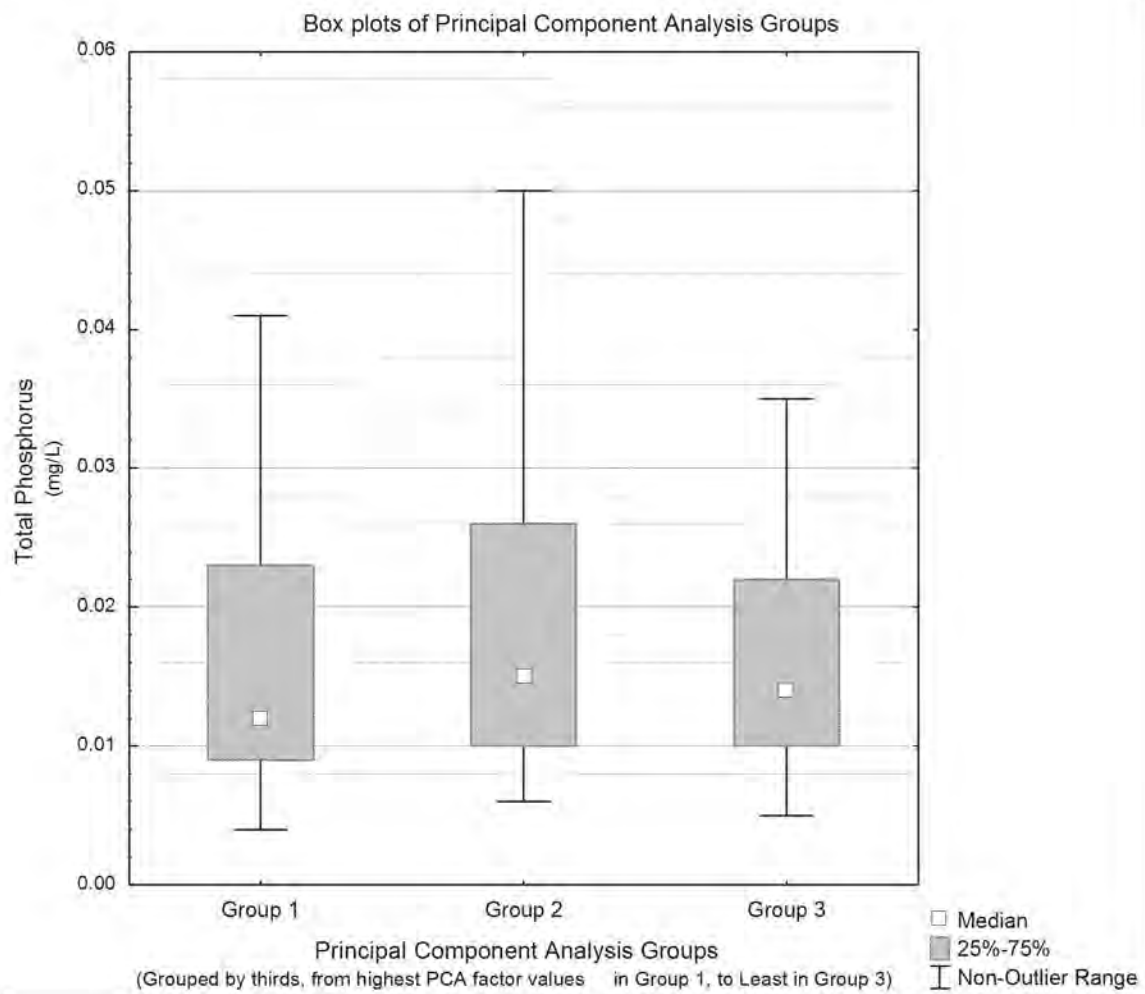


Figure 6 - Box and whisker plot of TP concentrations (mg/L) across the three principal component groups.

The resultant figure (Figure 7) indicates that group 3 sites (most urban) were frequently associated with sites scoring low for EPT taxa richness when TP concentrations were low. This group represents a large confounding effect on the EPT vs. nutrient relationship for Piedmont streams because these sites have generally low TP and low EPT richness, so are presumably primarily impacted by other stressors than nutrients. This analysis allowed us to isolate the conflicting effects of the urban stressors and focus more specifically where TP effects were strongest in order to better identify a protective TP threshold estimate for this region. Simple linear regression interpolative models (Figure 8), as recommended in the revised guidance (USEPA 2010), were then used to infer protective concentrations of TP associated with the adverse response condition for this metric (8 EPT taxa) with the confounding group 1 sites removed, and it can be seen that the nutrient response was even stronger (steeper slope and increased regression coefficient than the original models). The range in TP concentrations associated with the interpolation of EPT taxa richness of 8 taxa

with the lower 50th percentile prediction interval, a conservative prediction interval estimate, and the average predicted value was 10 to 85 µg/L. Groups 1 and 2 also produced independent linear models that were significant. The group 2 model was the most precise ($r^2 = 0.16$) and the predicted TP values associated with the EPT taxa richness endpoints for the lower quartile and average predictions ranged from 10 to 60 µg/L.

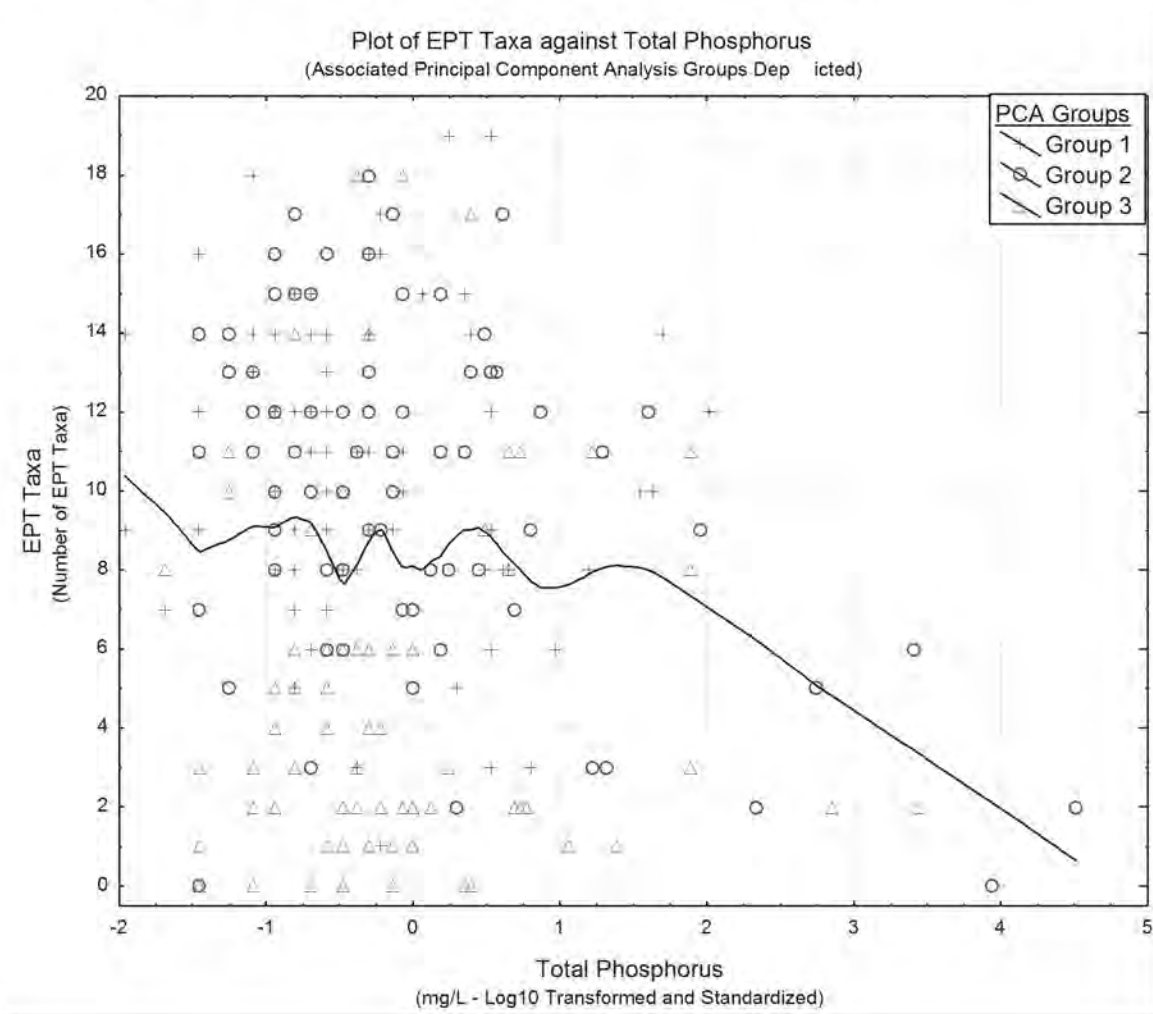


Figure 7 – Scatterplot of standardized TP concentration versus EPT taxa richness for MBSS piedmont sites. red triangles are group 3 (most urban), blue circles group 2, and black crosses group 1 (least urban). Black line is a loess smoothed fit through all the data.

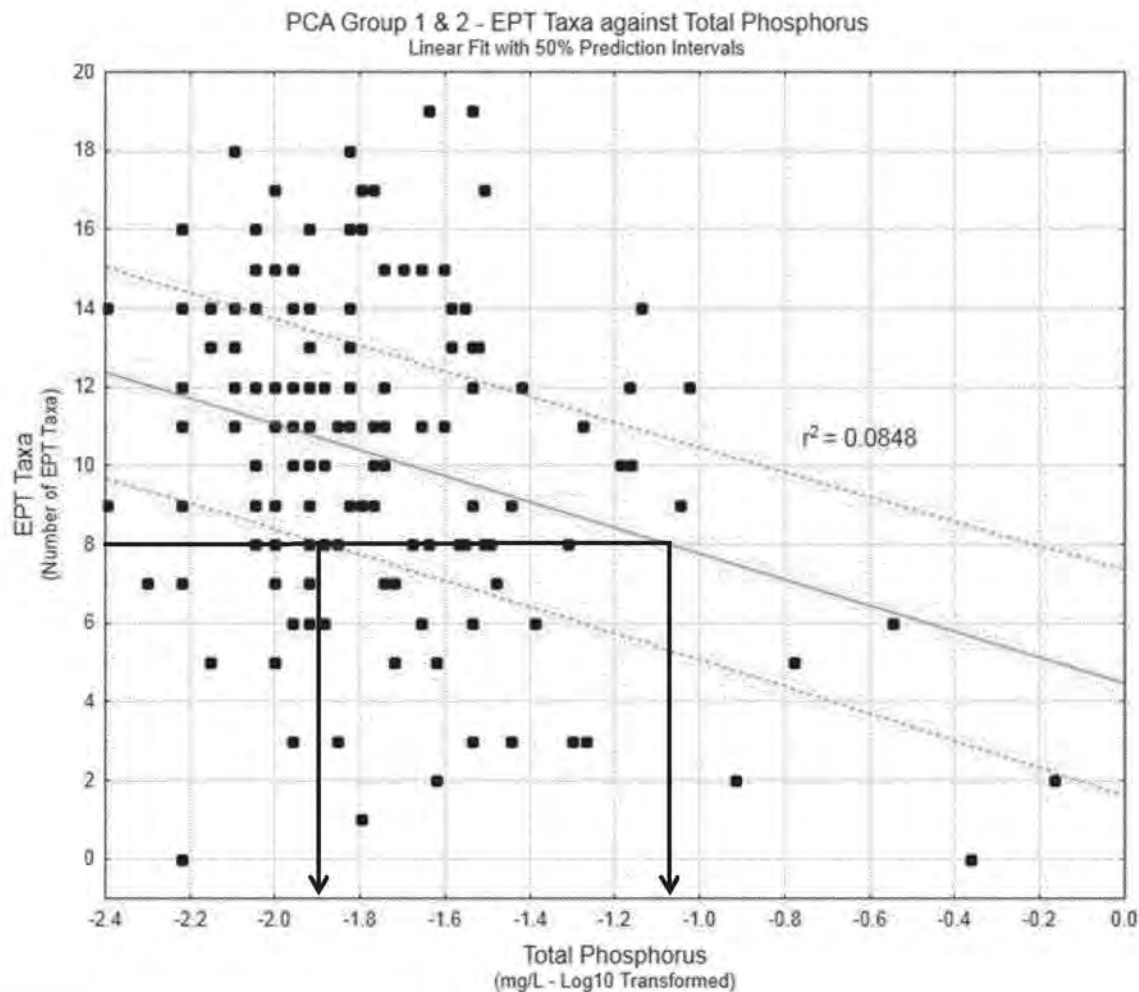


Figure 8 – Scatterplot of standardized TP concentration versus EPT taxa for Group 1, Group 2, and Groups 1 and 2 combined. Lines indicate TP lower quartile and average TP concentrations associated with the EPT richness endpoint (8). Hatched lines are the 50% prediction interval.

Similar analyses were conducted for percent intolerant urban and percent clinger metrics (Figures 9-12). These same metrics once again indicate a strong confounding effect of the most urban group (group 3), affecting the sites with low metric values and low TP values (Figures 9 and 10). Once again, by looking at the groups independently and groups 1 and 2 combined, the confounding effects of these urban covariates could be reduced allowing a clearer focus on the threshold TP concentration associated with adverse metric conditions in piedmont streams (Figures 11 and 12).

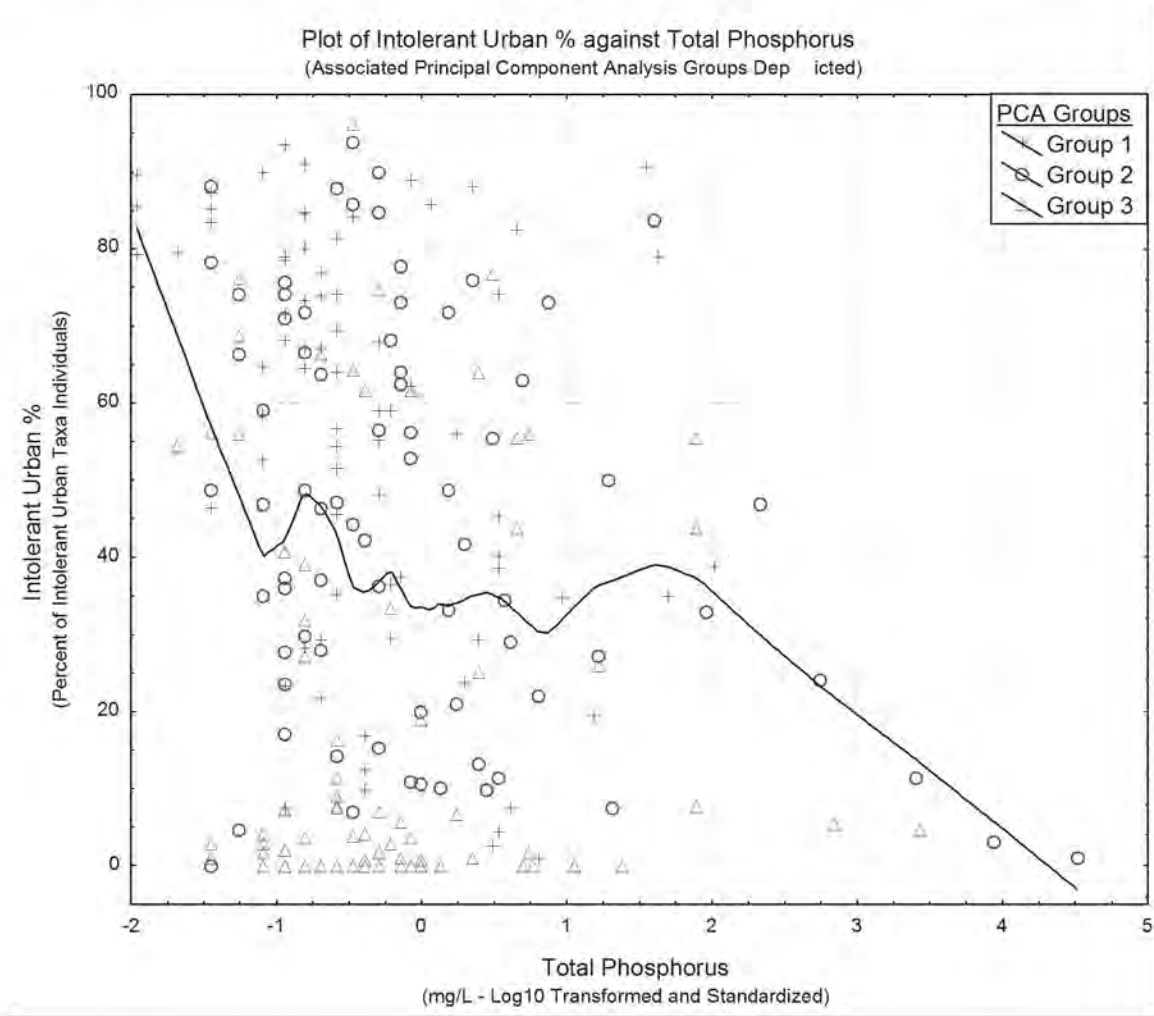


Figure 9 - Scatterplot of standardized TP concentration versus the percent intolerant urban metric for MBSS piedmont sites. Red triangles are group 3 (most urban), blue circles group 2, and black crosses group 1 (least urban).

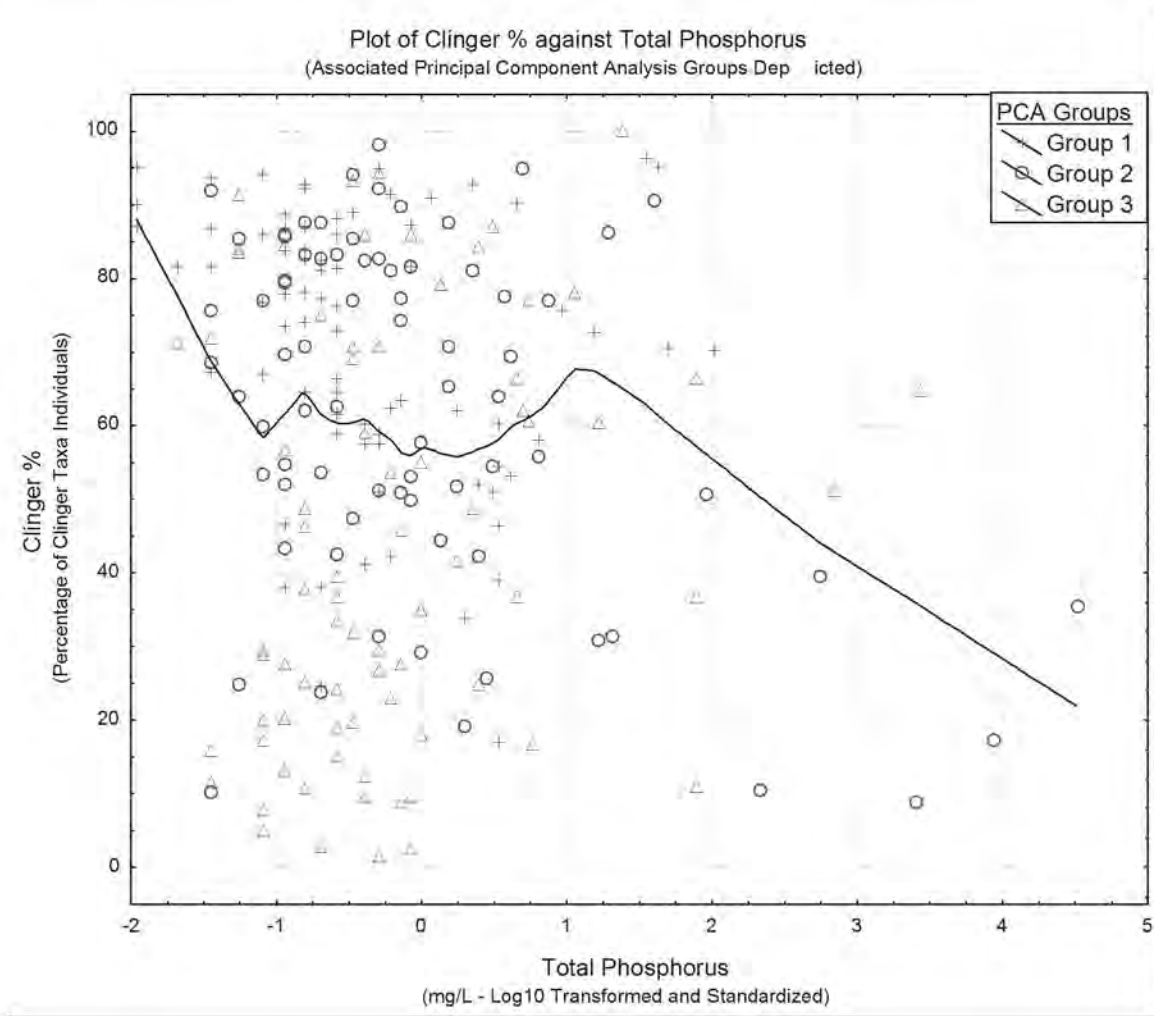


Figure 10 - Scatterplot of standardized TP concentration versus the percent clinger individuals metric for MBSS piedmont sites. Red triangles are group 3 (most urban), blue circles group 2, and black crosses group 1 (least urban).

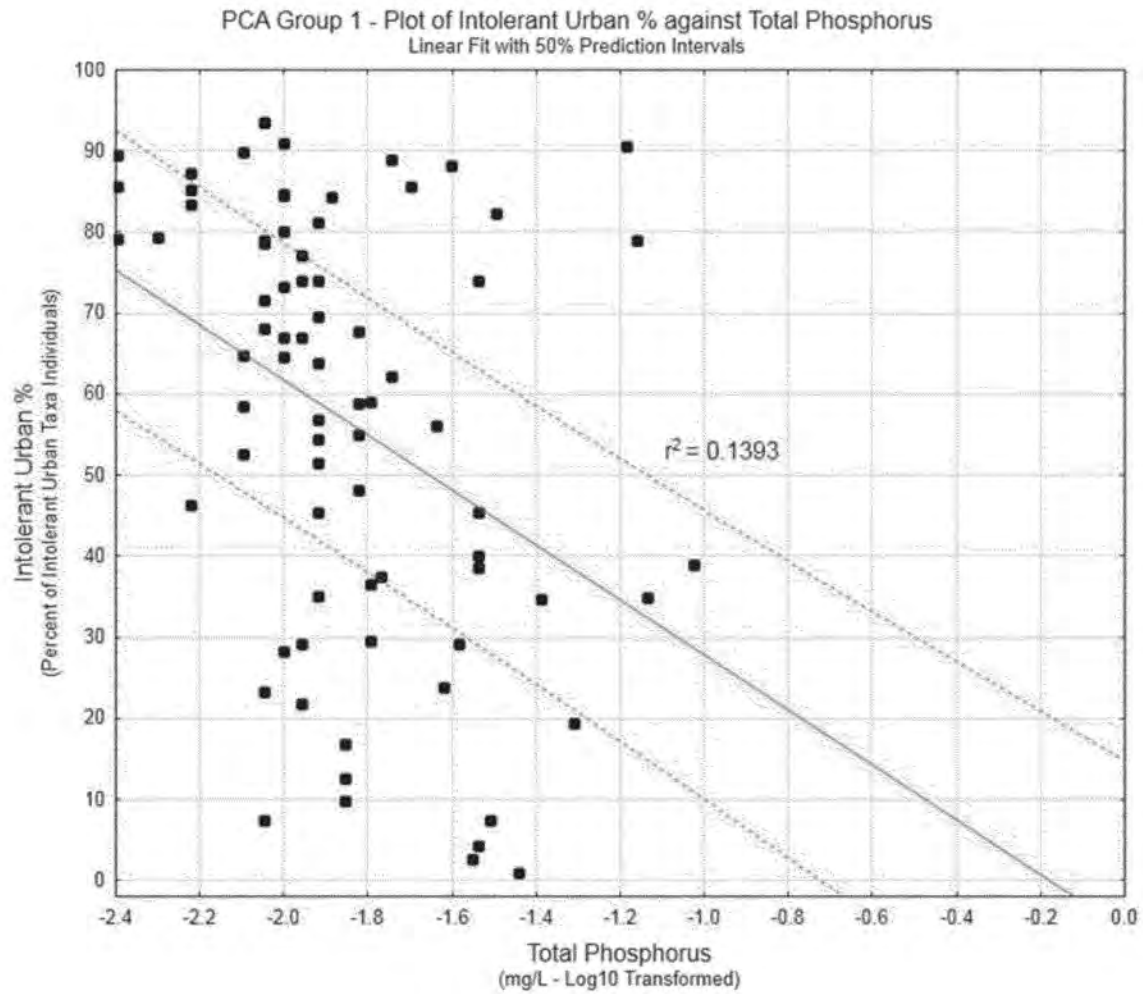


Figure 11 - Scatterplot of standardized TP concentration versus percent intolerant urban metric for Groups 1. Hatched lines are the 50% prediction interval.

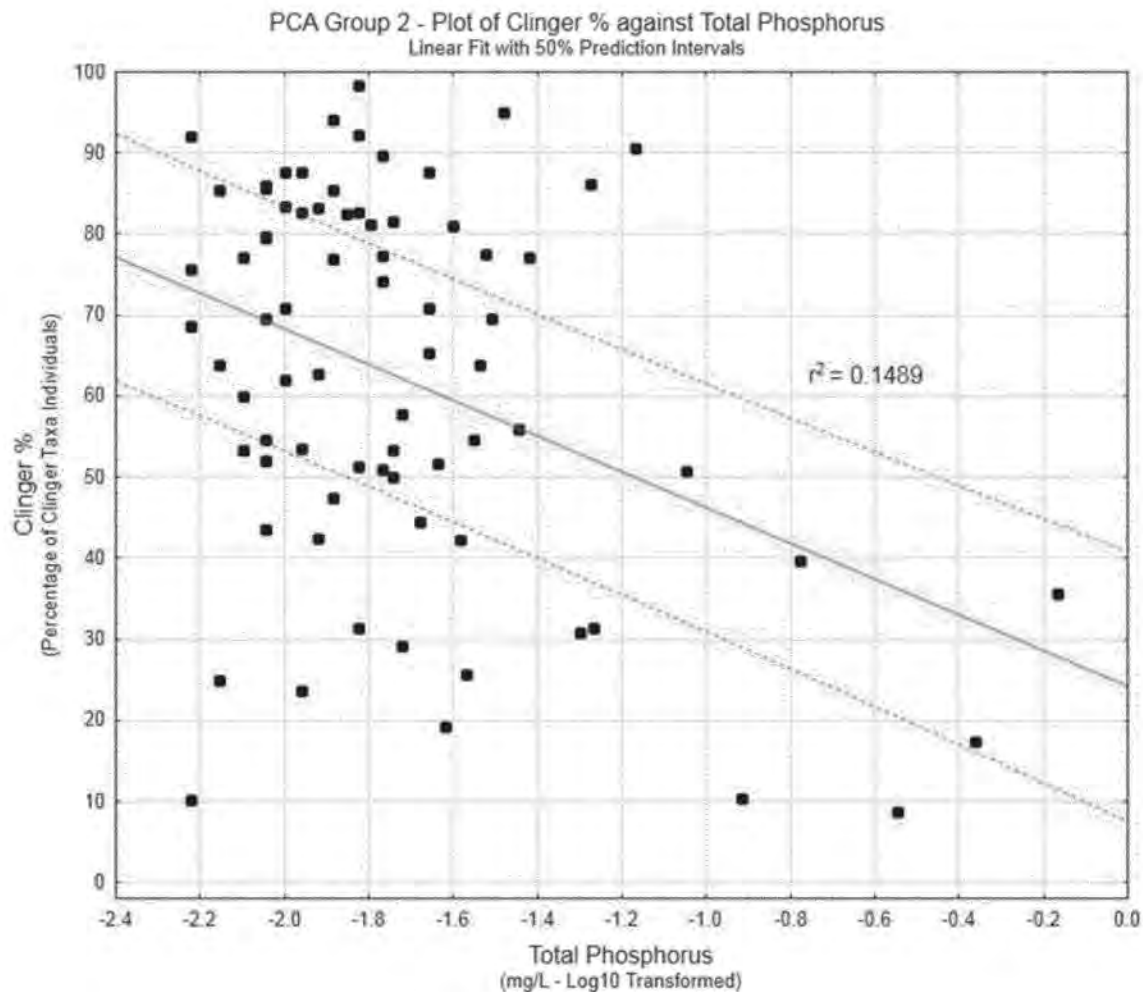


Figure 12- Scatterplot of standardized TP concentration versus percent clinger metric for Group 2. Hatched lines are the 50% prediction interval.

The range in TP concentrations interpolated from the intersection of the metric threshold values for percent intolerant urban (31.5%) for group 1 sites ($r^2=0.139$) was 16 to 78 $\mu\text{g/L}$ and for group 2 sites ($r^2=0.105$) was 8 to 82 $\mu\text{g/L}$. Similar interpolated values for the percent clingers metrics (metric threshold = 52.5%) was 8 to 52 $\mu\text{g/L}$ for the lower quartile and average prediction, respectively, for group 2 sites ($r^2=0.137$). Using group 1 and 2 combined for percent intolerant urban and group 1 and group 1 and 2 combined sites for the percent clinger models did not produce significant predictions.

Table 7 summarizes the prediction ranges from the different simple linear regression model predictions of TP for the three metrics explored.

Table 7 – Summary of interpolated TP concentrations ($\mu\text{g/L}$) associated with target response metric thresholds for different groups (bins) of sites based on urban intensity.

Metric	Groups	Interpolated TP ($\mu\text{g/L}$)	
		lower quartile	average
EPT Taxa	Group 2	10	60
	Groups 1 and 2	10	85
Percent Intolerant Urban	Group 1	16	78
	Group 2	8	82
Percent Clingers	Group 2	8	52

7. MODEL VALIDATION

There was a desire to provide some validation of the model linking invertebrate response to nutrients with independent data, consistent with revised USEPA guidance (USEPA 2010) to strengthen the basis for the inference. Data from USGS on stream nutrient concentrations and invertebrate metric response was made known to EPA (Rief 1999, 2000, 2002a, 2002b). These data were collected with similar but distinct sampling methods and to different fixed counts than the MBSS sample data. When the data were corrected with simple rarefaction to estimate taxa richness using a comparable number of individuals as recommended by basic ecological theory, what is evident from the rarefaction exercise is even given the difference in sampling habitat and sampling design, rarefied samples fit within the wedge shaped plot identified in the original relationship (Figure 13), supporting the original observation that invertebrate richness decreases with increasing nutrient concentrations and that this general decline begins at approximately 30-40 $\mu\text{g/L}$. Additional corrections for differences in the habitat and sampling design would likely improve the fit. These data support the trends observed in the MBSS data and provide independent reinforcement for the causal model.

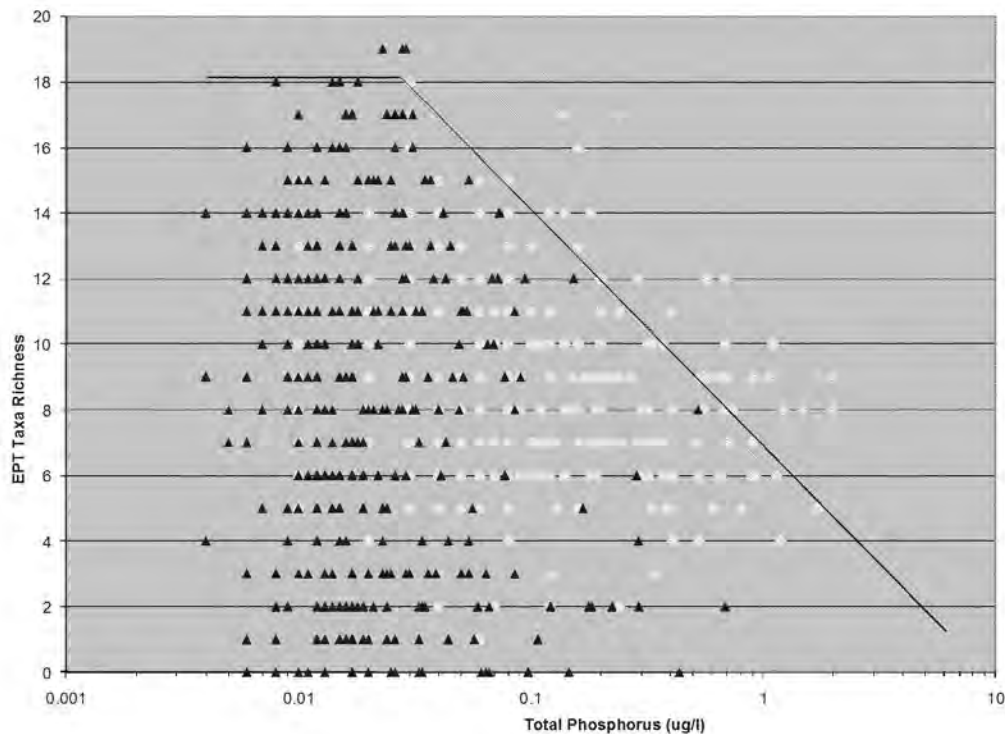


Figure 13 – Plot of TP versus EPT taxa richness for the MBSS (black triangle) and USGS Chester County datasets. The black lines indicate the locations of the approximate wedge shaped relationship between invertebrate response and TP concentration. The outer decline in EPT richness begins at a concentration of approximately 30-40 ug/L TP.

8. MECHANISTIC MODELING

Another line of evidence considered in the analysis of data for developing thresholds that was not included in the original report, was the use of a mechanistic model to estimate TP concentrations associated with adverse benthic algal concentrations in a Piedmont stream in Pennsylvania. A dynamic linked process model of Indian Creek using the Generalized Watershed Loading Functions (GWLF) and EPA's Environmental Fluid Dynamics Code (EFDC) was developed and used to evaluate average TP concentrations associated with exceeding a target benthic chlorophyll *a* density of 100 mg/m², a density on the conservative end of that frequently cited as a nuisance concentration (e.g., Dodds and Welch 2000, Suplee et al. 2008).

Watershed loads were simulated using GWLF and the in-stream water quality results were predicted using EFDC. The linked modeling system considers the loadings of nitrogen and phosphorus from all sources including point sources and non-point sources. The point source discharges of flow and nutrients were obtained from USEPA's DMR database. The non-point sources of runoff and nutrients are simulated using the GWLF model.

The GWLF model was first calibrated using observed data to ensure correct representation of the runoff and loading yield processes. Runoff and nutrient load predictions from GWLF

were then input to the EFDC model. The EFDC model simulates the transport of nutrients and other dissolved or particulate materials from upstream to downstream in the creek. It also simulates water temperature dynamically using weather data. The simulated water temperature is passed to EFDC's eutrophication module to model dynamics of benthic algae under the influence of water temperature, available solar radiation, and available nitrogen and phosphorus. Continuously observed DO data and grab samples of nutrients were used to support model calibration, which involved determining key benthic algae parameters including growth rate, metabolism rate, and excretion rate.

Figures 14 through 17 are examples of the Indian Creek EFDC model calibration results. No benthic chlorophyll *a* data were available for calibration; DO was used as an indicator of benthic algae based on the understanding that the DO fluctuation is mainly caused by the benthic algae in Indian Creek. A detailed discussion of model configuration, calibration, and application can be found in the EPA's Indian Creek TMDL report (EPA 2008).

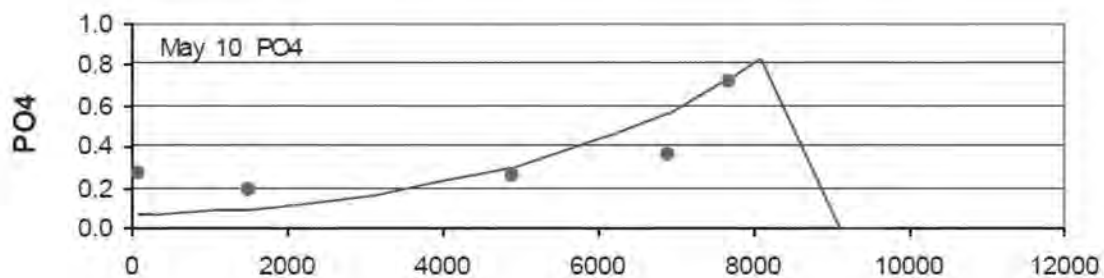


Figure 14 - Longitudinal profile of modeled and observed orthophosphate concentration (mg/L) in Indian Creek. The distance is meters from the mouth of Indian Creek. Red dots are data and blue line is model results.

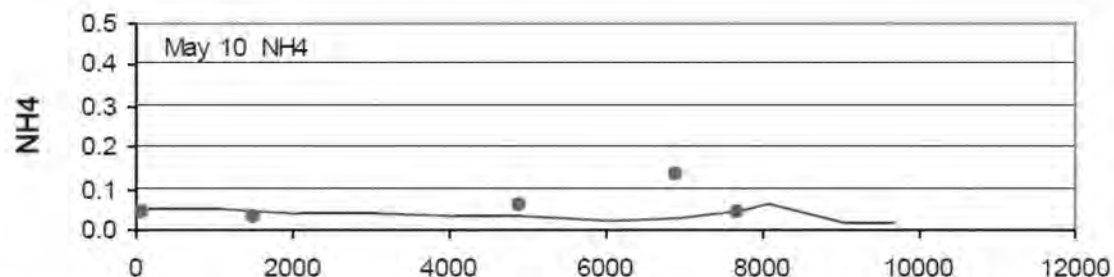


Figure 15 - Longitudinal profile of modeled and observed ammonia concentration (mg/L) in Indian Creek. The distance is meters from the mouth of Indian Creek. Red dots are data and blue line is model results.

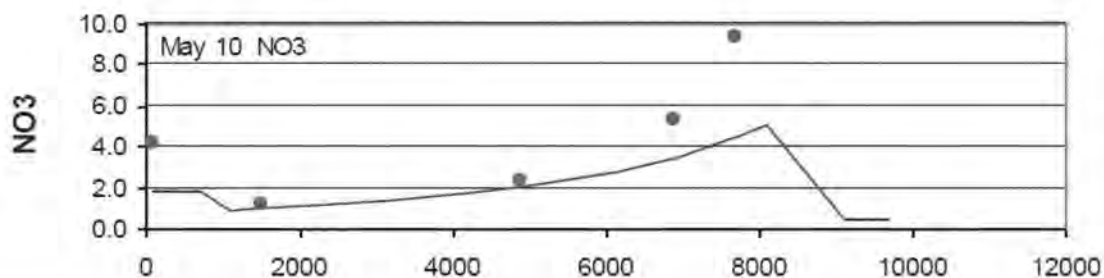


Figure 16 - Longitudinal profile of modeled and observed nitrate concentration (mg/L) in Indian Creek. The distance is meters from the mouth of Indian Creek. Red dots are data and blue line is model results.

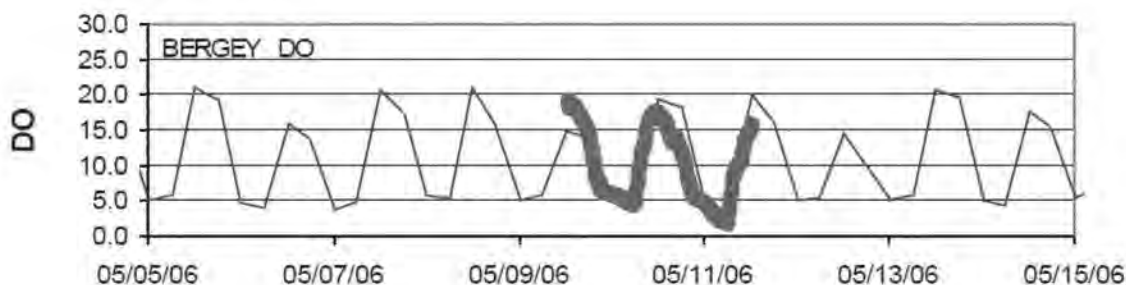


Figure 17 - Comparison of modeled and observed DO concentration (mg/L) at Bergey Rd. Red dots are data and blue line is model results.

After the model calibration parameters were determined, the model was applied to examine the level of nutrients required to achieve the desired average benthic algal density of 100 mg / m², of chlorophyll *a*. The process was iterative with some initial estimates regarding reduction of nutrients. No other factors, including solar radiation and water temperature were changed.

As nutrient loads were reduced, the resulting chlorophyll *a* levels were compared to the target benthic density (100 mg/ m²). Results indicate that when average TP concentrations are between 20-33 µg/L in Indian Creek, average benthic chlorophyll *a* levels are predicted to remain near the 100 mg/ m² desired threshold. These levels are slightly lower than/consistent with the average TP concentration targets derived by the multiple lines of evidence approach. Figure 18 shows predicted chlorophyll *a* levels for existing conditions and after reduction conditions at the Bergy Road location. These are directly resulting from reduced TP inputs.

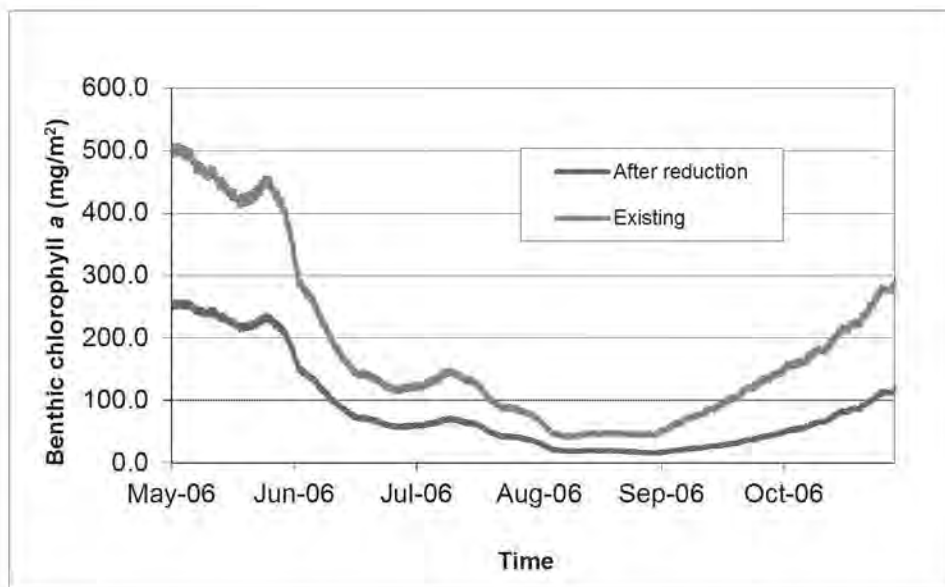


Figure 18 - Predicted periphyton (chlorophyll *a*) before and after simulated phosphorus reductions (Indian Creek, Bergey Rd sampling location).

9. SCIENTIFIC LITERATURE

The scientific literature was another line of evidence used in the original analysis. One study (Herlihy and Sifneos 2008), in particular, seemed relevant since the original PA TMDL TP target report was written; namely an analysis of national nutrient data collected as part of the USEPA Wadeable Streams Assessment (WSA, USEPA 2006). The WSA is the first comprehensive national probabilistic survey of streams in the US and included data collected from identified least disturbed reference streams (*sensu* Stoddard et al. 2006). The data collected in that study were used to estimate reference stream nutrient concentration upper quartiles, consistent with USEPA's original recommended regional criteria methodology and recommended in USEPA guidance (USEPA 2000). The 75th percentile TP concentrations in reference streams from the comparable nutrient ecoregion to the PA Piedmont were 60 µg/L.

10. UPDATED ENDPOINT SUMMARY

The following table updates the original report endpoint summary table with the additional analysis and information provided in this report.

Table 8 - Summary of candidate endpoints for each of the analytical approaches discussed.

Approach		TP Endpoint (µg/L)
Reference Approach		2-37
	Reference Site 75 th Percentile	16-17
	All Sites 25 th Percentile	17
	Modeled Reference Expectation	2-37
Stressor-Response		8-85
	Conditional Probability – EPT taxa	38
	Conditional Probability – % Clingers	39
	Conditional Probability – % Urban Intolerant	64
	Conditional Probability – Diatoms TSI	36
	Simple linear regression interpolation – EPT taxa	10-85
	Simple linear regression interpolation – Percent intolerant urban individuals	8-82
	Simple linear regression interpolation – Percent Clinger individuals	8-52
Other Literature		13-100
	USEPA Recommended Regional Criteria	37
	USEPA Regional Criteria Approach – Local Data	40-51
	Algal Growth Saturation	25-50
	Nationwide Meta-Study TP-Chlorophyll	21-60
	USGS Regional Reference Study	20
	USGS National Nutrient Criteria Study	13-20
	New England Nutrient Criteria Study	40
	Virginia Nutrient Criteria Study	50
	New Jersey TDI	25-50
	Delaware Criteria	50-100
	National Reference Criteria Study	60
Mechanistic Model		20-33
	Indian Creek	20-33

Given the resultant concentrations from the new stressor-response analyses and the fact that the range of endpoints derived with that method included the recommended endpoint (i.e., between the lower quartile and average estimate ranges), that distribution based values remain unaltered, that one additional scientific study estimating regional reference concentration recommends a value similar to the original value and in the range of previous literature, and that a process model of chlorophyll in streams used to derive a TP endpoint to meet acceptable benthic chlorophyll concentrations reached a comparable value, the recommended TP endpoint in the original report (40 µg/L) remains unaltered in the opinion of the authors.

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C. 20460

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April 27, 2010

EPA-SAB-10-006

The Honorable Lisa P. Jackson
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Subject: SAB Review of Empirical Approaches for Nutrient Criteria Derivation

Dear Administrator Jackson:

EPA's Office of Water (OW) requested that the Science Advisory Board (SAB) review the Agency's draft guidance document titled *Empirical Approaches for Nutrient Criteria Derivation* ("Guidance"). The Guidance is one of a series of technical documents developed by OW to describe approaches and methods for developing numeric criteria for nutrients. The Guidance specifically focuses on empirical approaches for determining stressor-response relationships to derive numeric nutrient criteria. In response to the Agency's advisory request, the SAB Ecological Processes and Effects Committee, augmented with additional experts, met on September 9-11, 2009 to conduct a peer review of the Guidance. OW requested that the SAB: 1) comment on the technical merit of the methods and approaches described in the Guidance; 2) suggest approaches that might be considered to improve the Guidance; and 3) offer suggestions to improve the utility of the Guidance for state and tribal water quality scientists and resource managers. The enclosed advisory report provides the advice and recommendations of the Committee.

The SAB commends EPA for addressing nutrient issues. Nutrients (nitrogen and phosphorus) are a major cause of impairment in the quality of the Nation's waters, and the SAB recognizes the importance of EPA's efforts to develop numeric nutrient criteria. The stressor-response approach is a legitimate, scientifically based method for developing numeric nutrient criteria if the approach is appropriately applied (i.e., not used in isolation but as part of a weight-of-evidence approach). We encourage the Agency to continue this important work.

EPA's draft Guidance provides a primer on a limited set of statistical methods that could be used in deriving nutrient criteria based on stressor-response relationships. However, in its present form, the Guidance does not present a complete or balanced view of using the statistical

methods to develop criteria. Restructuring and substantial revision of the Guidance is needed prior to its release to make the document more useful to state and tribal water quality scientists and resource managers.

In general, we find that the scope and intended use of the Guidance should be more clearly identified. The empirical stressor-response framework described in the Guidance is one possible approach for deriving numeric nutrient criteria, but the uncertainty associated with estimated stressor-response relationships would be problematic if this approach were used as a “stand alone” method because statistical associations do not prove cause and effect. We therefore recommend that the stressor-response approach be used with other available methodologies in the context of a tiered approach where uncertainties in different approaches are recognized, and weight-of-evidence is used to establish the likelihood of causal relationships between nutrients and their effects for criteria derivation. In this regard, we recommend that EPA more clearly articulate how this particular guidance fits within the Agency’s decision-making and regulatory processes and, specifically, how it relates to and complements EPA’s other nutrient criteria approaches, technical guidance manuals, and documents. The SAB also recognizes that methods in the Guidance do not address downstream impacts of excess nutrients.

The SAB has provided many recommendations to improve the Guidance and strongly recommends that they be incorporated into the final document. These recommendations focus on revising the document to address: cause and effect; the utility and limitations of the statistical methods and approaches in the document; the supporting analyses and data needed to correctly identify predictive relationships; the need for more guidance and examples to describe when and how to use various methods and approaches; linkages among designated uses and stressors; and the need for a more specific and descriptive framework outlining the steps in the criteria development process. Finally, the SAB strongly recommends that EPA invest in providing the technical support and training needed to make the approaches and methods in the final Guidance more useful to state and tribal water resource managers.

Thank you for the opportunity to review this important guidance document. The SAB looks forward to receiving the Agency’s response to this advisory report and stands ready to provide additional advice as EPA continues to develop nutrient criteria guidance.

Sincerely,

/Signed/

Dr. Deborah L. Swackhamer, Chair
Science Advisory Board

/Signed/

Dr. Judith L. Meyer, Chair
Ecological Processes and Effects Committee

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**U.S. Environmental Protection Agency
Science Advisory Board
Ecological Processes and Effects Committee (FY 2009) Augmented for Review
of Nutrient Criteria Guidance**

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I. EXECUTIVE SUMMARY

EPA's Office of Water (OW) requested that the Science Advisory Board (SAB) conduct a peer review of Agency's draft guidance document, *Empirical Approaches for Nutrient Criteria Derivation* (the "Guidance"). The Guidance was developed by OW to provide information for state and tribal water resource managers on empirical stressor-response approaches for developing numeric nutrient criteria. In response to the Agency's advisory request, the SAB Ecological Processes and Effects Committee reviewed the Guidance. To augment the expertise on the Committee for this advisory activity, several additional scientists with specific knowledge and expertise in assessing the effects of nutrient enrichment in aquatic systems also participated in the review.

EPA's Office of Water develops ambient water quality criteria that serve as guidance to states and tribes for adoption of water quality standards. The water quality standards include designated uses, such as aquatic life protection and recreation, and criteria that define levels of water quality variables protective of the designated uses. Because nutrients (nitrogen and phosphorus) are a major cause of impairment in the quality of the Nation's waters, state adoption of numeric nutrient criteria in water quality standards has been a high priority for OW. To assist the states and tribes in developing numeric nutrient criteria, OW published technical guidance manuals for developing nutrient criteria for lakes and reservoirs (U.S. EPA, 2000a), rivers and streams (U.S. EPA, 2000b), estuaries and coastal marine waters (U.S. EPA, 2001), and wetlands (U.S. EPA, 2008). These technical guidance manuals focus primarily on describing a reference condition approach for deriving criteria from distributions of nutrient concentrations and biological responses in minimally disturbed reference waterbodies. Other basic analytical approaches for nutrient criteria derivation recognized in the manuals include mechanistic modeling (i.e., predicting the effects of changes in nutrient concentrations using site-specific parameters and equations that represent ecological processes), which EPA intends to address as the subject of a later document, the stressor-response approach (discussed in the Guidance and considered in this advisory report), and the application and/or modification of established nutrient/algal thresholds. The stressor-response approach involves quantifying the relationship between nutrient concentrations and biological response measures related to the designated use of a waterbody.

The Guidance outlines a five-step process for developing numeric nutrient criteria. It describes data analysis methods and approaches that could be used in each of these steps. Step one involves the use of exploratory analysis and data visualization tools to select variables that appropriately quantify the stressor (i.e., excess nutrients) and the response. Step two involves the use of conceptual models, existing literature, and other methods to assess the strength of the relationship represented in the stressor-response linkage. Step three involves the use of various statistical methods to analyze data, estimate stressor-response relationships, and identify thresholds that may be used to derive water quality criteria. Step four involves the evaluation of estimated stressor-response relationships (including validation of predictive performance for a stressor-response model, and selecting a model that best represents the data). Step five involves evaluating candidate nutrient criteria by predicting conditions that might be expected after implementing different criteria. The Guidance contains five sections, each addressing one of the proposed steps in the criteria development process. In its charge to the SAB, EPA requested that

the Committee comment on the methods and approaches described in each section of the Guidance, recommend other approaches that might be considered, and offer suggestions to improve the utility of the Guidance for state and tribal water quality scientists and resource managers. In its responses to the charge questions, the Committee provides comments and recommendations to improve the Guidance and assist EPA in its efforts to support the development of numeric nutrient criteria.

General comments on the Guidance

The Committee recognizes the importance of EPA's efforts to support numeric nutrient criteria development and encourages the Agency to continue this important work. In addition, we recognize the stressor-response approach as a legitimate, scientifically based method for developing numeric nutrient criteria if it is appropriately applied (i.e., not used in isolation but as part of a tiered weight-of-evidence approach using individual lines of evidence as discussed here). The draft Guidance provides a primer on a limited set of statistical methods that could be used in deriving numeric nutrient criteria. However, we find that improvements in the Guidance are needed prior to its release to make the document more useful to state and tribal water quality scientists and resource managers.

In general, we find that the scope, limitations, and intended use of the Guidance should be more clearly described. The Guidance addresses only one type of "empirical" approach for derivation of numeric nutrient criteria (i.e., the stressor-response framework). As illustrated in many of the examples in the Guidance, considerable unexplained variation can be encountered when attempting to use the empirical stressor-response approach to develop nutrient criteria. The final Guidance should clearly indicate that such unexplained variation presents significant problems in the use of this approach. Further, the final document should clearly state that statistical associations may not be biologically relevant and do not prove cause and effect. However, when properly developed, biologically relevant statistical associations can be useful arguments as part of a weight-of-evidence approach (further discussed in Section 3.3, recommendation #7 of this advisory report) to criteria derivation. Therefore, the final Guidance should provide more information on the supporting analyses needed to improve the basis for conclusions that specific stressor-response associations can predict nutrient responses with an acceptable degree of uncertainty. Such predictive relationships can then be used with mechanistic or other approaches in a tiered weight-of-evidence assessment including cause and effect relationships to develop nutrient criteria.

Tiered environmental assessment is iterative. The initial assessment is the simplest (e.g., minimal ecosystem specific data) and most conservative (i.e., risks must be assumed in the absence of system-specific information), and thus, will not always provide sufficient certainty for decision-making. Cause and effect relationships would be inferred but not demonstrated; only a few lines of evidence would be available and the corresponding uncertainty great. At the highest tier, there would be several lines of evidence and factors that would confound the prediction of effects, such as other stressors or the morphology of the waterbody, and these need to be understood and considered. Successive tiers involve more focused (e.g., specific for particular ecosystem types) investigations, based on the results of the previous tier. Data needs are relatively few at the initial tier, but increase at successive tiers. However, through additional

testing, measurement, or modeling, uncertainty decreases at successive tiers, and sources of uncertainty become better understood. Policy makers require information to understand the uncertainty associated with regulatory decisions, and to determine how much uncertainty may or may not be acceptable in particular decision-making contexts. Weight-of-evidence typically determines the tier at which uncertainty has been reduced sufficiently for informed management decision-making. It is important to explicitly describe and consider uncertainty at each step of the criteria development and decision-making process. The level of uncertainty of the conceptual model is likely to be rather low, as it is mostly based on well-established general principles of aquatic systems. Here the uncertainty is about how well the selected conceptual model fits the specific stressors and ecological systems under consideration. As criteria are developed it is important to address uncertainty associated with more specific factors that influence biological responses to nutrient inputs because uncertainty may cascade down through the analysis, in effect multiplying the uncertainty in later steps of the analysis.

The Committee also recommends that EPA more clearly articulate how the Guidance fits within the Agency's decision-making and regulatory processes and, specifically, how it relates to and complements EPA's other nutrient criteria technical guidance manuals and documents. As further discussed in the response to Charge Question 1, numeric nutrient concentration criteria and load-response models should be considered as two different approaches for accomplishing the goal of controlling excessive nutrient loadings. In addition, the Committee notes that the methods in the Guidance do not address the problem of excess nutrient enrichment downstream from waters for which the criteria are being developed. There is a need for methods to address this problem (one of which could be load-response modeling) and it should be clearly stated that this is beyond the scope of the current guidance document.

Charge Question 1. Improving the utility of the Guidance for state and tribal water quality scientists and resource managers

What suggestions do you have that will improve the utility of the draft document, Empirical Approaches for Nutrient Criteria Derivation, for State water quality scientists and resource managers to derive numeric nutrient criteria based on stressor-response relationships?

The Committee finds that improvements in EPA's Guidance are needed to make the document more useful to state and tribal water quality scientists and resource managers and to ensure against inadvertent misuse. In this regard, as previously mentioned, the scope, limitations, and intended use of the document should be more clearly identified.

- The Committee recommends that EPA more clearly articulate how the Guidance fits within the Agency's decision-making and regulatory processes and, specifically, how it relates to and complements EPA's other nutrient criteria technical guidance manuals and documents.
- In the Guidance, and the Agency's related technical manuals, EPA should more clearly address the importance of: 1) establishing linkages among designated uses and measured responses, stressors and measures of stressors; and 2) relating measures of stressors directly to deleterious effects on designated uses.

- The Committee finds that the Guidance: 1) should provide a more specific and descriptive framework outlining the steps in the criteria development process (Figure 1 of this advisory report illustrates EPA's proposed framework for developing nutrient criteria and the SAB recommendations for revision of the framework); 2) must be detailed and sophisticated enough to ensure statistical rigor, but additional support must also be provided by EPA to help users meet the technical demands of the methods; 3) should more clearly express the caveats and limitations of the statistical methods and approaches in the document, in particular the fact that statistical correlations do not establish cause and effect; 4) should contain more technical guidance and examples to describe when and how to use various methods and approaches; and 5) should provide additional guidance on data requirements for application of the statistical methods and approaches.
- *Charge Question 2. Selecting stressor and response variables*

Section 1 of the draft guidance document reviews how to select the variables that appropriately quantify the stressor (i.e., excess nutrients) and the response (e.g., chlorophyll a, dissolved oxygen, or a biological index). Please comment on whether the factors to consider described in Section 1 of the draft document are appropriate for selecting response variables that are sensitive to nutrients and related to measures of designated uses.

In Section 1 of the Guidance, EPA discusses factors to consider when selecting the stressor and response variables. In this regard, the Committee finds that EPA should strengthen the Guidance by including additional material.

- The examples in the Guidance rely heavily on taxa richness as a response variable. Some rationale as to how this variable relates to a designated use should accompany these examples. The coupling of response variables to designated uses must be clear and the rationale explained. Further, the Guidance could be strengthened considerably by presentation of examples showing strong nutrient-response relationships with response variables that are clearly linked to designated uses.
- The Committee notes that co-limitation by both nitrogen and phosphorus may be common in many systems and regions. Therefore, the use of multivariate or data stratification approaches may be needed to identify nutrient-response relationships.

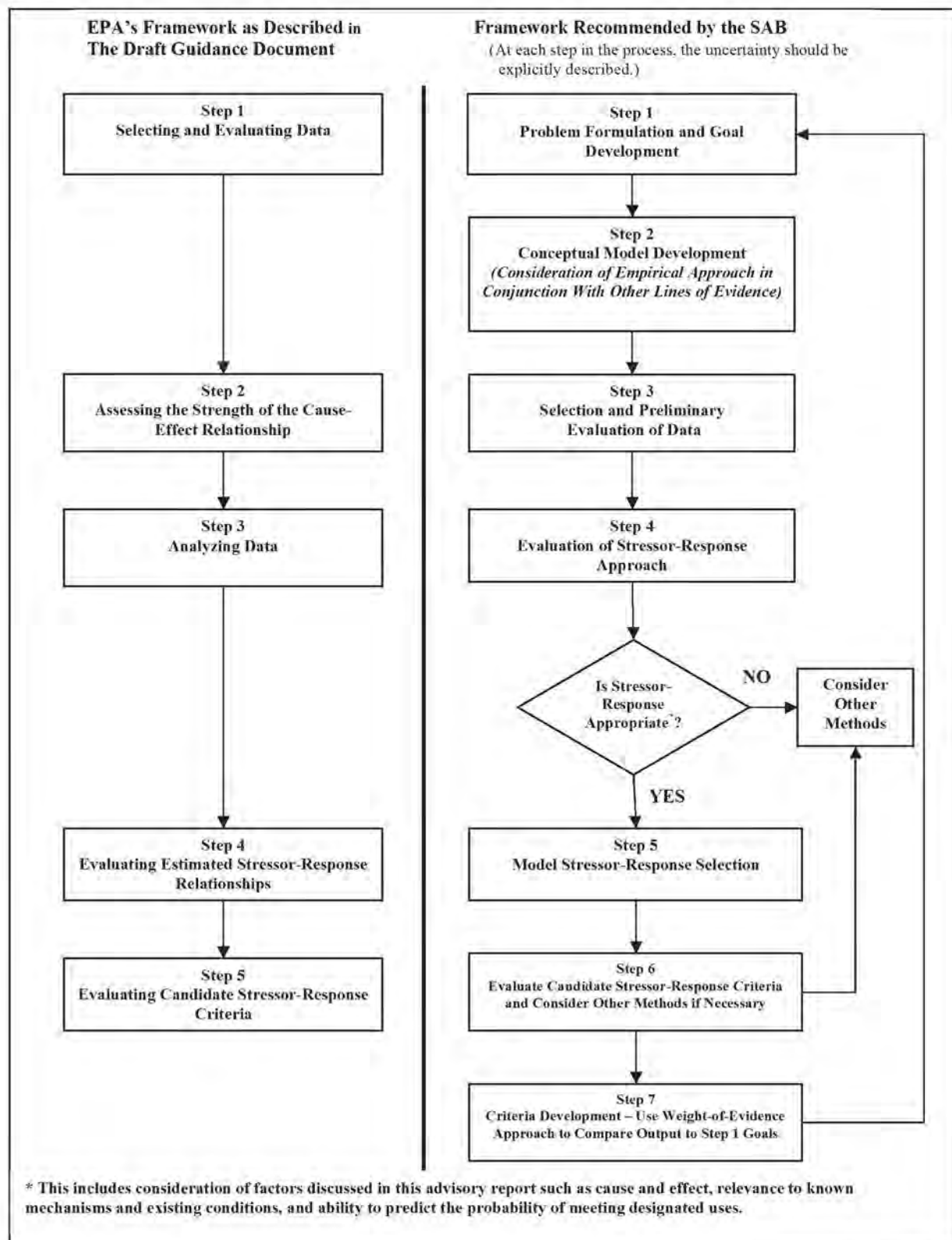


Figure 1. EPA's Framework for Developing Nutrient Criteria Based on Stressor-Response Relationships and SAB Recommendations for Revision

- The Guidance should provide more information on the data needed to characterize other stressor and constraint variables (e.g., high dissolved organic carbon versus low dissolved organic carbon lakes, shaded versus unshaded streams) which are critical for applying multivariate techniques or for stratification/classification of univariate nutrient-response relationships.
- The Guidance focuses on total nitrogen and total phosphorus as the primary nutrient stressor variables. In systems where inorganic nutrients are the dominant form, additional consideration should be given to inorganic nitrogen and phosphorus.
- The Guidance focuses on nutrient-response pathways driven by autotrophic processes (nutrients directly control algal growth and excessive amounts of algae impair systems through indirect effects on dissolved oxygen, food web changes, and aesthetics). The Committee notes that nutrients can also directly control heterotrophic microbes (bacteria and fungi) and indirectly control decomposition of organic matter. This should be more fully discussed in the Guidance.
- The Guidance provides inadequate discussion of the temporal/spatial aspects of data needed to develop relevant stressor-response relationships. The Guidance should discuss the conditions under which mean/median or maximum/minimum values of stressor and response variables might be more appropriate than discrete instantaneous measurements for developing stressor-response relationships. The use of time series data to describe specific systems should also be addressed. Although such guidance may be provided in various system-specific technical manuals (e.g., U.S. EPA, 2000a, b), a summary synthesis of the major points in these earlier documents should be included in the Guidance.

Charge Question 3. Approaches to demonstrate the distribution of and relationships among variables

Section 1 outlines methods to visualize available data. Please comment on the effectiveness of the following approaches described in the document (listed below) to demonstrate the distribution of and relationships among variables.

- a) Basic data visualization techniques*
- b) Maps*
- c) Conditional probability*
- d) Classifications*

Section 1 of the Guidance discusses exploratory data analysis, and presents several methods for demonstrating the distribution of and relationships among variables. In Subsections 1.2 - 1.6 several basic plotting techniques are presented. This is followed by a description of conditional probability analysis (a statistical approach for summarizing how changes in nutrient concentrations are associated with the probability of waterbodies attaining their designated uses). The Committee finds that the discussion of exploratory data analysis would be more effective if Section 1 of the Guidance were reorganized and expanded.

- As further discussed in the response to Charge Question 3, Subsections 1.2 - 1.6 of the Guidance should be reframed as a separate major section on exploratory data analysis, which should follow another separate major section on problem formulation. The material in Subsection 1.1 (selection of stressor-response variables) should be moved to a later section of the document.
- The Guidance should stress that exploratory data analysis, including data visualization, should be conducted prior to inferential statistical analyses of potential stressors and responses. The objectives of exploratory data analysis should be to better understand the system of interest and to maximize accuracy and minimize variability of subsequently derived stressor-response relationships.
- Additional methods for exploratory data analysis should be discussed in the Guidance. These additional methods should include: use of summary statistics, time series plots at fixed points in space; longitudinal plots at fixed points in time; bubble plots; Pearson and other correlation analyses; and maps that show temporal (monthly, seasonal, inter-annual) as well as spatial patterns.
- Clear guidance is needed on when and how to use the statistical methods and visualization techniques presented in the document. The strengths and limitations of the methods should also be clearly identified. It would be useful to show several case examples that range from state-wide to local and data-rich to data-poor; and exemplify different types of aquatic ecosystems (e.g., headwater streams, large rivers, lakes and estuaries). Examples should note the strengths, limitations, assumptions and uncertainties that must be considered when using the methods to explore and visualize the data. These examples should demonstrate how nutrients can be identified as significant stressors in the presence of multiple stressors and habitat factors that may affect the resident communities.
- Subsection 1.6 of the Guidance (examination of stressor-response distributions across different classes, e.g., ecoregions) should be expanded. The subsection should discuss additional data analyses and examples for different spatial classifications (e.g., ecoregions, states, watersheds, systems of interest), different waterbody types (e.g., streams, rivers, lakes, estuaries) and other important physical and chemical characteristics of systems that could affect the applicability of the nutrient criteria.

Charge Question 4. Methods for assessing the strength of the cause-effect relationship

Section 2 of the draft guidance document describes methods for assessing the strength of the cause-effect relationship represented in the stressor-response linkage. Please comment on whether the draft guidance document adequately describes how conceptual models, existing literature, and empirical models can be used to assess how changes in nutrient concentration are likely to cause changes in the chosen response variable.

Section 2 of the Guidance provides a summary of how the strength of candidate stressor-response pairings from step 1 can be assessed. The Committee recommends a number of improvements in this section.

- It is appropriate to use conceptual models and existing literature as the scientific basis to assess how changes in nutrient concentrations might affect response variables. However additional discussion of conceptual model selection, with specific examples, would be helpful. As illustrated in Figure 1 of this advisory report and further discussed in the response to Charge Question 7, the Committee recommends that development of the conceptual model occur in or immediately after the problem formulation step, early in the process of criteria development.
- Structural Equation Modeling (SEM) is discussed in the Guidance as a method for exploring nutrient-ecosystem response. The Committee finds that use of SEM should be more fully explained. Clear examples of its use should be provided.
- The Guidance discusses the use of Propensity Score Analysis (PSA) to estimate stressor-response relationships. PSA seems to be useful for sorting out groups that share covariates but may have unique nutrient characteristics. Such sorting could lead to a clearer understanding of how nutrients function amid multiple covariates. The example of PSA in the Guidance appendix is helpful, but further explanation of how to interpret the results of the analysis is needed. An analysis such as PSA should be discussed in a later section of the Guidance because it is a tool for analyzing data (Section 3 of the Guidance) rather than supporting potential relationships.
- It is not clear why EPA did not include information obtained from mechanistic models in Section 2 of the Guidance. Because mechanistic models can integrate information on the interactions of major ecosystem processes to derive quantitative estimates of effects, they should be discussed as a means to interpret the stressor-response relationship.

Charge Question 5. Statistical methods to analyze the data

Section 3 of the draft guidance document outlines statistical methods to analyze the data to estimate stressor-response relationships. Please comment on the appropriateness of the methods outlined in the document (listed below) for describing stressor-response relationships associated with nutrient pollution. What approaches would you recommend that could effectively address indirect pathways of adverse effects? What recommendations do you have to address the effects of confounding variables and uncertainty in the estimated relationships?

- a) Simple linear regression*
- b) Quantile regression*
- c) Logistic regression*
- d) Multiple linear regression*
- e) Non-parametric changepoint analysis*
- f) Discontinuous regression models*

Section 3 of the Guidance describes a number of statistical methods for analyzing data to estimate stressor-response relationships. The Committee provides comments addressing the appropriateness of statistical methods for estimating stressor-response relationships.

- Methods described in the Guidance are generally appropriate for estimating stressor-response relationships in support of conceptual models. However, as further discussed in the response to Charge Question 5, more careful consideration of confounding variables is necessary to maximize the potential for stressor-response relationships to reflect cause and effect between nutrient concentrations and ecological responses. The Guidance should be revised to state this more definitively and better assist its users in achieving this objective.
- Those charged with using stressor-response methodology may require additional technical support to use the methods in the Guidance.
- EPA should provide guidance on how the degree of the relationship (indicated by R^2 , residuals analysis, and other evidence) relates to establishing predictive stressor-response relationships for numeric nutrient criteria development. The Committee also notes that uncertainty must be identified and quantified for all methods and at all stages of the process.

Charge Question 6. Evaluating the predictive accuracy of stressor-response relationships

Section 4 of the draft guidance document describes how to evaluate the predictive accuracy of estimated stressor-response relationships. Please comment on the appropriateness of approaches in Section 4 of the guidance document and factors to consider in evaluating and comparing different estimates of the stressor-response relationships and selecting those most appropriate for criteria derivation.

The Committee provides comments on the appropriateness of approaches discussed in Section 4 of the Guidance and the factors to consider in evaluating and comparing different estimates of stressor-response relationships in order to select those most appropriate for criteria development. Overall, the Committee finds that this section of the Guidance lacks the detail provided in other sections and needs improvement.

- A clear framework for statistical model selection is needed. This framework should include: 1) an assessment of whether analyses indicate that the stressor-response approach is appropriate; 2) selection criteria to evaluate the capability of models to consider cause/effect and direct/indirect relationships between stressors and responses; 3) consideration of model relevance to known mechanisms and existing conditions; 4) establishment of biological relevance; and 5) ability to predict probability of meeting designated use categories.
- The concept of “validation” as presented in Subsection 4.1 of the Guidance is inconsistent with other EPA guidance (U.S. EPA, 2009a) on development, evaluation, and application of models. Model corroboration (sensu “validation”) and uncertainty analysis should both be part of model evaluation and selection. These activities should be directed and informed by pre-established data quality objectives. Additional guidance is also needed on: data set

specification and stratification; a suite of validation techniques (e.g., random or non-random held-out data, independent data, resampling/Monte Carlo); and appropriate quantitative levels of goodness-of-fit and uncertainty measures.

- With regard to validation, the Committee recommends that nutrient criteria should result from a tiered weight-of-evidence approach based on the application of multiple empirical approaches and consideration of multiple response variables as appropriate. The nutrient criteria values that may be determined, after considering validation and uncertainty, may vary significantly from technique to technique or from response variable to response variable. EPA should provide greater guidance on how to assign numeric criteria when a range of responses among analyses/models results in different values.

Charge Question 7. Evaluating candidate stressor-response criteria

Section 5 of the draft guidance document describes how to evaluate the candidate stressor-response criteria. An approach is outlined for predicting conditions that might result after implementing different nutrient criteria. Please comment on uncertainties that would remain if water quality criteria for nutrients were based solely on estimated stressor-response relationships and in what ways other information/analysis would help address and possibly reduce this uncertainty?

Section 5 of the Guidance describes how to evaluate candidate numeric nutrient criteria. The Committee provides comments on uncertainties associated with deriving candidate water quality criteria. We also recommend improvements in the Guidance to help address and reduce uncertainty.

- The Guidance describes approaches that use a data-mining exercise to demonstrate a possible cause-effect relationship for the nutrient-ecosystem response. However, as further discussed in the response to Charge Question 7, the document does not address or partition the inherent critical uncertainties associated with the stressor-response approach. We note that these uncertainties can be extremely large (e.g., several orders of magnitude). To address these uncertainties, the Guidance should better document the physical, chemical and biological variables comprising the morphological relationships (e.g., habitat, spatial, and temporal) that define the aquatic system of interest, and which may be important in modifying the relationship between nutrient concentrations (both nitrogen and phosphorus) and observed endpoints. These factors may dominate the cause-effect pathway and should be documented so that uncertainty in the relationship between nutrient concentrations and measured endpoints can be reduced.
- The Guidance should indicate that, at the start of the initial problem formulation exercise, a realistic cause-effect conceptual model must be developed, and that the model should include those factors that are likely to contribute most to the change in the response variable for the specific region/system of interest. Then data analyses can be used to evaluate which of the factors, or combination of factors, caused the observed change in the response variable.

- As further discussed in the response to Charge Question 7, when predicting conditions that might result after implementing nutrient criteria, it is important to consider environmental factors that may cause differences in nutrient concentrations and biological conditions (e.g., lead and lag times) in response to nutrient loadings.
- There is considerable uncertainty in linkage of the response variables discussed in the Guidance to the Clean Water Act goals of drinkable, swimmable, and fishable waters. The recommended response variables in the Guidance should be directly linked to these Clean Water Act goals.

2. INTRODUCTION

EPA's Office of Water (OW) requested that the Science Advisory Board (SAB) conduct a peer review of the Agency's draft guidance document, *Empirical Approaches for Nutrient Criteria Derivation* (the "Guidance"). The Guidance was developed by EPA's Office of Water to provide information for water resource managers on the scientific foundation for using empirical approaches to describe stressor-response relationships for developing numeric nutrient water quality criteria. The SAB Ecological Processes and Effects Committee (Committee) met on September 9th-11th, 2009 to review the Guidance. To augment the expertise on the Committee for this advisory activity, several additional scientists with specific knowledge and expertise in assessing the effects of nutrient enrichment in aquatic systems also participated in the review. This report transmits the advice of the Committee.

EPA's Office of Water is charged with protecting aquatic life, wildlife, and human health from adverse water-mediated effects of anthropogenic pollutants. In support of this mission, OW develops ambient water quality criteria that serve as guidance to states and tribes for adoption of water quality standards. State and tribal water quality standards include designated uses, such as aquatic life protection and recreation, and criteria that define levels of water quality variables protective of the designated uses. Because nutrients (nitrogen - N and phosphorus - P) are a major cause of water quality impairment in the Nation's waters, state adoption of numeric nutrient criteria into water quality standards has been a high priority for OW. The Office of Water has stated that numeric nutrient water quality standards are important because they can: support development of nutrient related Total Maximum Daily Loads (TMDLs); provide targets for nutrient trading programs; and make it easier to write National Pollutant Discharge Elimination System (NPDES) permits, evaluate the success of nutrient runoff minimization programs, and measure environmental progress.

To assist states and tribes in developing numeric nutrient criteria, OW published peer reviewed technical guidance for developing such criteria for lakes and reservoirs (U.S. EPA, 2000a), rivers and streams (U.S. EPA, 2000b), estuaries and coastal marine waters (U.S. EPA, 2001), and wetlands (U.S. EPA, 2008). These technical guidance documents focus primarily on a reference condition approach for deriving nutrient criteria from distributions of nutrient concentrations and biological responses in minimally disturbed reference waterbodies. Other basic analytical approaches for nutrient criteria derivation identified in prior guidance documents include mechanistic modeling (i.e., predicting the effects of changes in nutrient concentrations using site-specific parameters and equations that represent ecological processes), the stressor-response approach, and the application and/or modification of established nutrient/algal thresholds. The stressor-response approach involves quantifying a relationship between nutrient concentrations and biological response measures related to the designated use of a waterbody. In the Guidance, EPA states that, when developing nutrient criteria, the strengths and characteristics of each analytical approach should be carefully considered with respect to data availability and designated use protection needs.

The Guidance outlines a five-step process for developing numeric nutrient criteria. Step one involves selecting variables that appropriately quantify the stressor (i.e., excess nutrients) and the

response. The Guidance describes various techniques for exploratory data analysis to understand the properties of different variables and visualize data. These techniques include histograms, box and whisker plots, quantile-quantile plots, cumulative distribution plots, scatter diagrams, and spatial mapping. Step two involves assessing the strength of the relationship represented in the stressor-response linkage. The Guidance discusses the use of conceptual models, existing literature, and empirical models to assess the degree to which changes in nutrient concentration are likely to cause changes in a chosen response variable. Step three involves analysis of data to estimate stressor-response relationships and identify thresholds that may be used to derive criteria. The Guidance describes a number of statistical methods for analyzing data to estimate stressor-response relationships. These methods include linear regression, logistic regression, quantile regression, non-parametric changepoint analysis, and discontinuous regression modeling. Step four involves evaluating the stressor-response relationships (including validation of predictive performance for a stressor-response model and selecting a model that best represents the data). Step five involves evaluating candidate stressor-response criteria. The Guidance outlines an approach for predicting conditions that might be expected after implementing different nutrient criteria and selecting a value to optimize resource protection. The Committee was asked to comment on the scientific and technical merit of the methods and approaches discussed in the Guidance and to offer suggestions to improve the usefulness of the document to state and tribal water quality scientists and resource managers.

The Committee recognizes the importance of EPA's efforts to support numeric nutrient criteria development and encourages the Agency to continue this important work. In addition, we recognize the stressor-response approach as a legitimate, scientifically based method for developing numeric nutrient criteria if it is appropriately applied (i.e., not in isolation). The draft Guidance provides a primer on a limited set of statistical methods that could be used in deriving nutrient criteria based on stressor-response relationships. However, the Committee finds that improvements in the Guidance are needed prior to its release to make the document more useful to state and tribal water quality scientists and resource managers.

In general, we find that the scope, limitations, and intended use of the Guidance need to be more clearly described. The Guidance addresses only one type of "empirical" approach for derivation of numeric nutrient criteria (i.e., the stressor-response framework). In this regard, we strongly recommend that EPA more clearly articulate how the Guidance fits within the decision-making and regulatory processes and, specifically, how it relates to and complements EPA's other nutrient criteria technical guidance manuals and documents. As illustrated in the data analysis examples in the Guidance, a large degree of unexplained variation can be encountered when attempting to use the empirical stressor-response approach to develop nutrient criteria. The final Guidance should clearly indicate that such unexplained variation can present significant problems in the use of this approach. Further, *the final document should clearly state that statistical associations may not be biologically relevant and do not prove cause and effect.* When properly developed, statistical associations can be useful in supporting cause and effect arguments as part of a weight-of-evidence approach (further discussed in Section 3.3, recommendation #7 of this advisory report) to criteria development. Therefore, the final Guidance should provide more information on the supporting analyses needed to improve the basis for conclusions that specific stressor-response associations can predict nutrient responses with an acceptable degree of uncertainty. Such predictive relationships can then be applied, with

mechanistic or other approaches, in a tiered weight-of-evidence assessment using individual lines of evidence in combination to develop nutrient criteria. Tiered environmental assessment is iterative. The initial assessment is the simplest (e.g., minimal ecosystem specific data) and most conservative (i.e., risks must be assumed in the absence of system-specific information), and thus will not always provide sufficient certainty for decision-making. Cause and effect relationships would be inferred but not demonstrated; only a few lines of evidence would be available and the corresponding uncertainty high. At the highest tier, there would be several lines of evidence and factors that would confound the prediction of effects, such as other stressors or the morphology of the waterbody, and these need to be understood and considered. Successive tiers will involve more focused (e.g., specific for particular ecosystem types) investigations, based on the results of the previous tier. Data needs are relatively few at the initial tier, but increase at successive tiers. However, through additional testing, measurement, or modeling, uncertainty decreases at successive tiers, and sources of uncertainty become better understood. Policy makers require information to understand the uncertainty associated with regulatory decisions, and to determine how much uncertainty may or may not be acceptable in particular decision-making contexts. Weight-of-evidence typically determines the tier at which uncertainty has been reduced sufficiently for informed management decision-making. It is important to explicitly describe and consider uncertainty at each step of the criteria development and decision-making process. The level of uncertainty of the conceptual model is likely to be rather low, as it is mostly based on well-established general principles of aquatic systems. Here the uncertainty is about how well the selected conceptual model fits the specific stressors and ecological systems under consideration. As criteria are developed, it is important to address uncertainty associated with more specific factors that influence biological responses to nutrient inputs because uncertainty may cascade down through the analysis, in effect multiplying the uncertainty at later steps.

In our responses to the charge questions we have recommended specific revisions to improve various sections of the Guidance before it is published. These recommendations focus on: modifying the framework of the Guidance to make it more specific and descriptive (as illustrated in Figure 1 of this report); providing additional information on conditions under which the stressor-response framework may apply; more clearly expressing the caveats, limitations, and data requirements associated with the approaches presented in the Guidance; providing additional information and examples showing when and how to use methods and approaches described in the document; and providing more detailed and descriptive guidance on the use of statistical methods and additional support from EPA to help users meet the technical demands of the methods.

3. RESPONSE TO CHARGE QUESTIONS

In the responses to each of the charge questions, the Committee has listed key findings and comments as bullets. These findings are followed by the Committee's key recommendations. Various aspects of some cross-cutting findings have been discussed in the responses to more than one of the charge questions and cross-references have been provided.

3.1. Charge Question 1. Improving the utility of the Guidance

What suggestions do you have that will improve the utility of the draft document, *Empirical Approaches for Nutrient Criteria Derivation*, for State water quality scientists and resource managers to derive numeric nutrient criteria based on stressor-response relationships?

The Committee was asked to offer suggestions to improve the usefulness of the Guidance to state and tribal water quality scientists and resource managers for deriving numeric nutrient criteria based on stressor-response relationships. In this regard, we find that the following improvements in EPA's Guidance are needed.

Findings concerning improving the utility of the Guidance

- The scope, limitations, and intended use of the Guidance should be more clearly identified. The Guidance addresses only one possible approach (i.e., the stressor-response framework) for derivation of numeric nutrient criteria. The Guidance would be more useful if it: 1) expanded upon the utility of the mechanistic modeling approach for understanding stressor-response relationships and the reference condition approach for criteria derivation; 2) more clearly articulated how it relates to EPA's other published nutrient criteria guidance; 3) explained the linkages among designated uses, stressors, measures of stressors, and the deleterious effects of stressors on designated uses; 4) explained that the Guidance does not address "downstream" effects of nutrients; and 5) acknowledged other factors that have appeared to limit state progress toward developing nutrient criteria (e.g., lack of data and technical expertise, insufficient resources, or other factors).
- Substantial revision of the document is needed to facilitate identification of the most scientifically defensible approaches to deriving numeric nutrient criteria. The Committee emphasizes that understanding the causative link between nutrient levels and impairment is necessary in order to assure that managing for particular nutrient levels will lead to desired outcomes. As further discussed below, the stressor-response framework in the Guidance may often not be the most appropriate approach for deriving numeric nutrient criteria. [See the response to Charge Question 5 for additional discussion.]
- Substantial revision of the document is needed to increase its usability while reducing the likelihood of misuse. The Committee finds that the Guidance would be more useful if it: 1) provided a more specific and descriptive framework outlining the steps in the criteria development process (a specific example is illustrated in Figure 1); 2) contained more technical guidance and examples to describe when and how to use various methods and approaches in the document and ensure statistical rigor (with additional support provided from EPA to help users meet the technical demands of the methods); 3) more clearly expressed the caveats and limitations of the statistical methods and approaches in the document; and 4) provided additional guidance on data requirements for application of the statistical methods and approaches. [See the response to Charge Question 5 for additional discussion.]

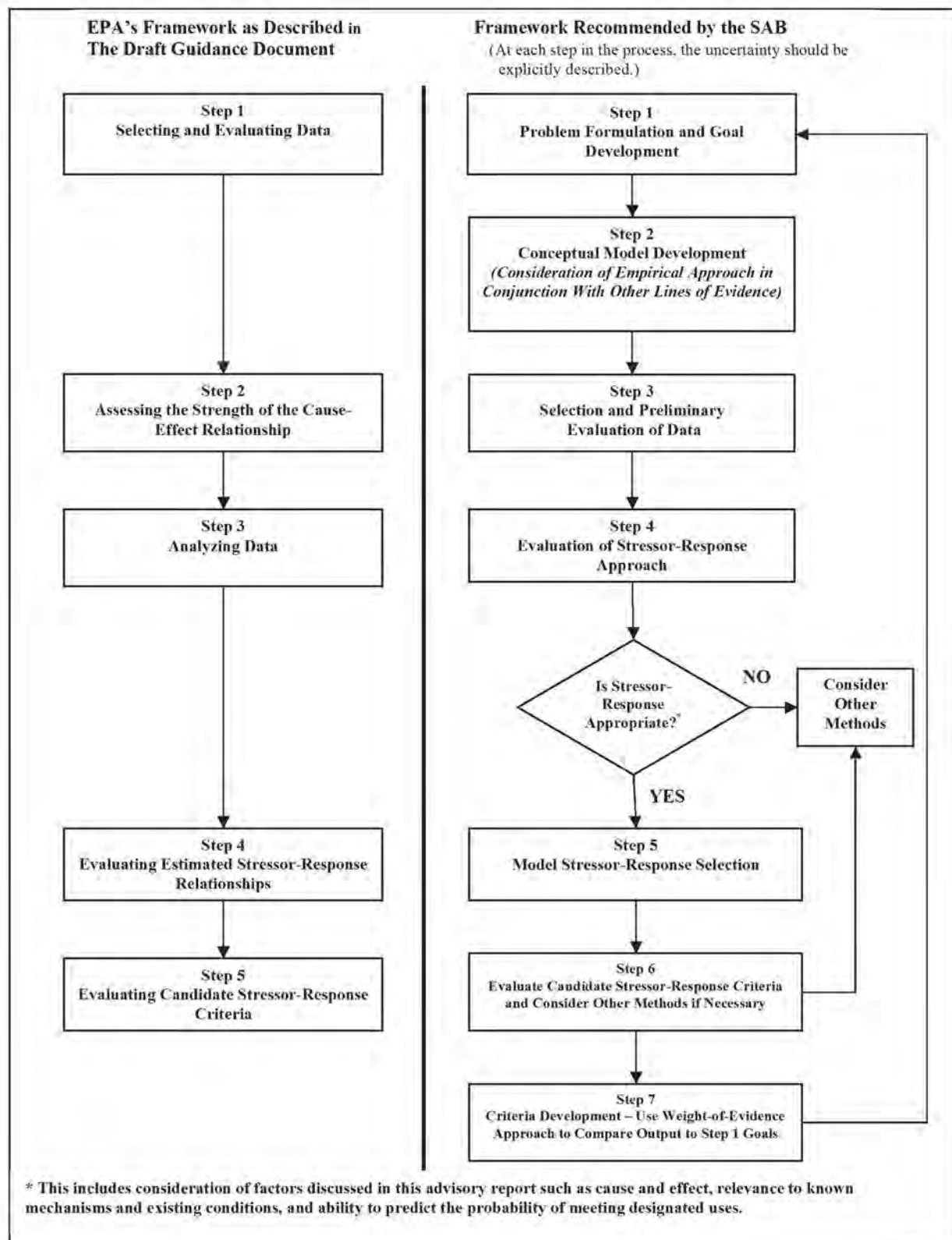


Figure 1. EPA's Framework for Developing Nutrient Criteria Based on Stressor-Response Relationships and SAB Recommendations for Revision

- The absence of a direct causative relationship between stressor and response is one of the most serious issues raised by the Committee. Without a mechanistic understanding and a clear causative link between nutrient levels and impairment, there is no assurance that managing for particular nutrient levels will lead to the desired outcome. There are numerous empirical examples where a given nutrient level is associated with a wide range of response values due to the influence of habitat, light levels, grazer populations and other factors. If the numeric criteria are not based upon well-established causative relationships, the scientific basis of the water quality standards will be seriously undermined. [See the responses to Charge Questions 4, 5, and 7 for additional discussion.]
- Numeric nutrient concentration criteria and load-response models should be considered as two different approaches for accomplishing the goal of controlling excessive nutrient loadings. EPA has put forth the reference condition approach, the empirical stressor-response approach, and mechanistic modeling as basic analytic approaches for development of numeric nutrient criteria. However, the way in which EPA used results from mechanistic models to develop nutrient load reduction goals for the Gulf of Mexico (Mississippi River/Gulf of Mexico Watershed Nutrient Task force, 2008), and the way in which it is currently using mechanistic models for nutrient and sediment TMDLs for Chesapeake Bay, does not involve development or use of numeric nutrient criteria. The reason is that these mechanistic models (Scavia et al., 2004; Cerco and Noel, 2004) are load-response models, not empirical stressor-response models, and hence they obviate the need for numeric nutrient criteria because they directly link nutrient loads to response variables that represent water quality impairments (e.g., dissolved oxygen, chlorophyll, water clarity and acreage of submerged aquatic vegetation). This reasoning applies not only to mechanistic models but can also apply to empirical models. Turner et al. (2008) and Hagy et al. (2004) developed empirical statistical models for hypoxia in the Gulf of Mexico and Chesapeake Bay, respectively. Both of these models are load-response models and neither involves numeric nutrient concentrations. Further support for this reasoning can be found in Carleton et al. (2005), an EPA study designed to demonstrate the use of mechanistic models to develop nutrient criteria. In fact, in the two examples presented in this study, mechanistic models were actually used as load-response models and not to develop ambient nutrient concentration criteria.

Key recommendations concerning identification of the scope, limitations, and intended use of the document

As a consequence of the Committee's discussion and the findings listed above, we provide the following recommendations for revising the Guidance

1. EPA should specify how the Guidance is to be used in combination with other EPA nutrient criteria technical guidance manuals. In the preamble, the Guidance should clearly state that the contents represent one of several possible approaches (i.e., the stressor-response framework in the Guidance, mechanistic modeling, reference condition, and the application and/or modification of established nutrient/algal thresholds) that should be considered when deriving numeric nutrient criteria, and expand upon the utility

of considering all approaches in a tiered weight-of-evidence approach before deciding on a particular course of action. In this regard, the Guidance should indicate that numeric nutrient concentration criteria and load-response models should be considered as two different approaches for accomplishing the goal of controlling excessive nutrient loadings. To provide additional information on other approaches, EPA should consider appending to the document relevant portions from earlier guidance manuals.

2. EPA should more clearly articulate how the Guidance fits within the decision-making and regulatory processes and, specifically, how it relates to and complements EPA's nutrient criteria technical guidance manuals and other EPA technical documents. Outlining the fundamental principles that underlie the use of stressor-response relationships and providing background information on water quality impairments (e.g., causes and types of impairments, types of designated uses) might provide a useful context. Including a clearer description of how water-use designations influence the derivation of empirically-derived nutrient criteria might be considered as well. Considering the number and usefulness of other EPA-developed processes and recommendations, the authors should consider how they might improve the integration of this document with other EPA efforts. For example, the Guidance would benefit by incorporating the problem formulation stage that is part of the Ecological Risk Assessment process (see Figure 1 of this advisory report).
3. In the Guidance, EPA should address the importance of: 1) establishing linkages among designated uses, measured responses, stressors, and measures of stressors; and 2) relating measures of responses directly to deleterious effects on designated uses. We agree with the statement in the Florida Department of Environmental Protection's letter of September 4, 2009 (letter from Daryll Joyner, Florida Department of Environmental Protection to Thomas Armitage, Designated Federal Officer, EPA Science Advisory Board Staff Office) indicating that the "most scientifically defensible strategy for managing nutrients within the range of uncertainty is to verify a biological response prior to taking a management action." This risk/performance-based approach to setting nutrient criteria is evident not only in Florida's program, but also in those developed by California and Maine (Florida Department of Environmental Protection, 2009; Maine Department of Department of Environmental Protection, 2009; McLaughlin and Sutula, 2007). Those risk-based linkages are not addressed in either the Guidance or EPA's Nutrient Criteria Technical Guidance documents for Rivers (U.S. EPA, 2000a), Lakes/Reservoirs (U.S. EPA, 2000b), and Estuaries (U.S. EPA, 2001).
4. In the Guidance, EPA should emphasize that the document does not address downstream effects of nutrient enrichment, which are intended to be the focus of a separate future document. Load-response models may prove useful in addressing downstream effects. The Committee has some reservations about addressing downstream effects in a separate document because fragmentation of the guidance documents will increase the likelihood that each will be used in isolation and potentially provide misleading results.
5. In the Guidance, EPA should acknowledge key factors that have appeared to limit state progress toward developing nutrient criteria. It is the Committee's understanding that

one of the key aims of the Guidance is to accelerate State progress toward adopting numeric nutrient criteria. Because a variety of issues (such as limited availability of data and technical expertise, insufficient resources, and expense) are likely responsible for slow progress, the Guidance may not sufficiently remedy the underlying problems and therefore not facilitate state numeric nutrient criteria adoption. A more thorough exploration of the underlying reasons for slow progress would help EPA more directly address specific issues that impede progress.

Key recommendations concerning identification of the most scientifically defensible approaches to deriving numeric nutrient criteria

6. In the Guidance, EPA should recommend that users consider alternative conceptual and methodological approaches in cases where such approaches may be needed to account for complex problems associated with nutrients. The problem of eutrophication is complex, involving multiple causal variables, multiple response variables, and feedbacks among the variables (e.g., plants increase in response to nutrients then, in turn, those nutrients are provided a second time as plants decay). Moreover, response variables can be at multiple levels - primary response variables (e.g., plants), secondary response variables (e.g., dissolved oxygen [DO], pH), and tertiary response variables (e.g., fish, macroinvertebrates). A change in a response variable is unlikely to be satisfactorily described by changes in a single "causal" variable (e.g., total nitrogen [TN] or total phosphorus [TP]). The Committee suggests that developing conceptual models/diagrams (more detailed and accurate than shown in Figure 10 of the Guidance) to illustrate linkages and feedbacks between nutrients and response variables would be a useful approach to capture ecological complexity and better construct the conceptual framework.
7. In the Guidance, EPA should explicitly acknowledge the conditions under which the stressor-response relationship applies. For example, the stressor-response relationship is relatively strong and well-established in lakes and reservoirs as opposed to streams and rivers where the relationship is more complex and influenced by many factors (e.g., shading, sediment, flow regime). In cases where the relationship is not the most appropriate lens through which the problem should be viewed, the user could be directed to other approaches that might better fit the problem. Other documents referenced above (e.g., Florida nutrient guidance document) provide useful examples. The Guidance would benefit from addition of an inset "red-flag" text box that lists circumstances or system characteristics that would alert the user to the need to consider approaches other than stressor-response. This box also might caution the user about mixed systems that have been highly modified and are not easily classified. Likewise, these caveats should also include explicit recognition that the most appropriate criteria may depend upon contexts of the waterbody (e.g., shaded versus open canopy streams), as was done in Florida's guidance document. Searching for a single statewide criterion might obscure important relationships.

8. The Committee suggests that EPA consider the following two key questions as the Agency selects variables to develop numeric criteria: 1) which measures will allow detection of impairment of designated uses? and 2) is the relationship sufficiently strong to determine a management or regulatory target (i.e., a criterion) to ensure that the designated use is protected? In certain cases, the most appropriate numeric criterion may not be a particular concentration level of a nutrient. Moreover, the stressor-response framework is but one approach for developing numeric nutrient criteria, and often it may not be the most appropriate. Because this concern cuts across all recommendations and approaches included in the Guidance, and also cuts across all charge questions, it must be addressed.

Key recommendations to increase the usability of the Guidance and reduce the likelihood of misuse

9. EPA should consider modifying the steps that provide the framework of the Guidance. The Committee suggests that the steps in the framework should be more specific and descriptive. An example is illustrated in Figure 1 of this advisory report. Two important aspects of the example in Figure 1 currently are missing from the Guidance: problem formulation/goal development and conceptual model development should be the first steps in the process, and the framework should contain an explicit step to determine whether the stressor-response relationship is appropriate.
10. EPA should revise the Guidance to include more detailed and descriptive information on the use of the statistical methods discussed in the document. In addition, EPA should provide additional support to help users meet the technical demands of the methods. The Committee finds that the current draft of the Guidance is written for a user with considerable statistical expertise that may or may not be possessed by state water agencies. This potential mismatch has two serious potential consequences. First, the Guidance will not be helpful if it cannot be easily used by state/tribal water scientists, and second, the recommended methods could be misused and/or misapplied if not sufficiently understood by the user. As a corollary, the Guidance could specify the level of expertise needed by potential users. Correctly identifying the level of expertise of the anticipated users and providing detailed and descriptive information for them is perhaps the most critical step in the continued development and refinement of the Guidance. As part of this process, EPA needs to outline a relatively straightforward process that the users can follow to employ the methods described, and provide technical support for their use.
11. In the Guidance, EPA should more clearly express the caveats and limitations of the approaches presented. In this regard, the following issues are of greatest concern to the Committee: a) The approaches presented in the Guidance are correlative and do not demonstrate causation. b) Many water quality problems are site-specific and confounding variables likely exist. c) As further discussed in the responses to charge questions 2, 3 and 5, there are limitations associated with the retrospective approaches that are the primary focus of the Guidance, and also shortcomings associated with the multivariate techniques presented in the document. In particular, EPA should better

identify potential confounding variables and other latent variables that may affect the response.

12. The Guidance should be revised to include additional information (i.e., technical guidance) and more examples showing when and how to use different approaches presented in the document, the advantages and limitations of each approach, the underlying assumptions and data requirements, appropriate interpretations of statistical results, and how to best parameterize the statistical models. This “how-to” information could take a number of forms, including keys, inset boxes, and appendices. Users must be given additional information that provides a clear understanding of why and under which conditions they should consider any particular approach. Related to this, the Committee recommends that the Guidance contain additional examples of the methods described in the document. Specific topics that might be included in this technical guidance include: how to modify the approaches in order to derive site-specific criteria, how to identify thresholds, use of weight-of-evidence approaches, and how to handle censored values. EPA also could include an appendix that lists other sources of assistance (e.g., Regional Technical Assistance Groups [RTAGs]), and methodological resources). Organization of the document and current section headings also could more clearly identify the steps involved in the suggested empirical approaches. It would also be helpful to incorporate case studies that apply data sets typical of what most states have. These case studies could highlight decision points in the process of criteria derivation. The use of a single case study across all the various approaches suggested in the document would be particularly helpful.
13. The document should better address data requirements (including data acquisition and data quality requirements). Without providing guidelines on data requirements, the potential for applying techniques to inappropriate or inadequate data sets is great. The Committee recommends casting this discussion in terms of data quality objectives (DQOs) and therefore suggests the following process: 1) state the problem; 2) identify the decision; 3) identify inputs to the decision; 4) define the study boundaries; 5) develop a decision rule; 6) specify tolerable limits on decision errors; and 7) optimize the design for obtaining data.

3.2. Charge Question 2. Selecting stressor and response variables

Section 1 of the draft guidance document reviews how to select the variables that appropriately quantify the stressor (i.e., excess nutrients) and the response (e.g., chlorophyll a, dissolved oxygen, or a biological index). Please comment on whether the factors to consider described in Section 1 of the draft document are appropriate for selecting response variables that are sensitive to nutrients and related to measures of designated uses.

Section 1 of the EPA Guidance reviews factors to consider when selecting stressor and response variables for empirical derivation of numeric nutrient criteria. The Committee finds that this section of the Guidance could be strengthened and recommends that EPA include additional material to address the points discussed below. Although the current version of the

Guidance addresses some of these points, we recommend including additional examples and revisions to further develop various parts of the text as discussed below.

Findings on selecting response variables

- Although the Guidance states that response variables should be coupled to designated uses, the Committee finds that this point needs additional elaboration. Some response variables described in the Guidance are clearly related to designated uses (e.g., DO) but the linkage of other responses to designated uses is less obvious or not as well supported scientifically (e.g., macroinvertebrate species richness). Despite the importance of DO and the fact that a large number of waterbodies are impaired due to low DO concentrations, none of the examples in the Guidance include DO as a response variable. This is a significant omission that needs correcting. The Committee notes that appropriate response variables are also highly ecosystem specific. For example, chlorophyll concentrations are often more clearly related to designated uses for lakes than streams. While response variables for single taxa (e.g., salmon) may be tightly related to designated use, multimetric variables (macroinvertebrate indices, index of biotic integrity [IBI]) may be more powerful for integrating the response to nutrients at the community or ecosystem level. The Guidance would be strengthened by including more discussion relating ecosystem type and potential response variables to the designated uses (a table with some accompanying text might be an effective way to do this). [See the response to Charge Questions 3, 5, and 7 for additional discussion.]
- Conceptual model development should be required and should be incorporated early in the process of criteria development (see Figure 1 of this advisory report). Conceptual models are an important component in selection of response variables. Any stressor-response relationship used in criteria development must have ecological relevance (based on ecological understanding of the system) that can be readily explained and defended as discussed in step two in the Guidance. Conceptual models based on past empirical and experimental studies are important for identifying the mechanisms responsible for responses and effectively communicating this linkage. In the framework suggested by the Committee (Figure 1), developing the conceptual model is the second step in the process. [See the responses to Charge Questions 4 and 6 for additional discussion.]
- The Guidance would be strengthened considerably by presentation of examples illustrating a strong nutrient-response relationship and, as previously mentioned, clear linkage of the response variable to a designated use. It is important to clearly present the rationale for such linkage. Some of the examples in the Guidance illustrate relationships with very low R^2 and response variables that are not clearly related to designated use. [See the responses to Charge Questions 3, 5, 6, and 7 for additional discussion.]
- In the Guidance, further discussion of potential response variables appropriate for nutrient effects on detritus-based systems is warranted (e.g., how macroinvertebrate populations dependent on detritus may respond). The Guidance focuses on nutrient-response relationships driven by autotrophic processes (nutrients directly control algal growth, excessive amounts of which impair systems through indirect effects on DO, food web

changes, and aesthetics). However, nutrients can also directly control heterotrophic microbes (bacteria, fungi) and indirectly control decomposition of organic matter. Excessive nutrient levels could produce large microbial growths or alter food webs in detritus-based ecosystems (e.g., many streams). Studies in the literature are cited, but examples using relevant response variables (e.g., shredder macroinvertebrate biomass, leaf breakdown rate) would be useful.

Findings on stressor and related variables

- In the Guidance, more discussion is needed to outline and provide advice on the rationale for selecting variables that should be included in data collection to allow: 1) classification/stratification of data prior to evaluation of stressor-response relationships (e.g., development of different criteria for different strata of systems); and 2) use of multivariate approaches to separate the influence of nutrients from other stressors (e.g., sediments, light regime, toxics). Stratification/classification is a particularly important issue for defining nutrient stressor-response relationships for streams where other factors can impose significant constraints on the effects of excess nutrients on designated uses. For example, nutrient-chlorophyll relationships may not be observed in highly shaded (forested) streams, but may be significant in open-canopy streams. Similarly, nutrient-chlorophyll relationships may be weak in high gradient streams but much stronger in low-gradient streams. For lakes, nutrient-chlorophyll relationships may be much different for highly-colored (high dissolved organic carbon [DOC]) versus clear (low DOC) systems. [See the responses to Charge Questions 3 and 5 for additional discussion.]
- Single variable stressor-response relationships (e.g., those derived using the simple linear regression approach discussed in the Guidance) that explain a substantial amount of variation are likely to be uncommon for most aquatic ecosystems (in particular, streams). Multivariate approaches (multiple regression, structural equation modeling [SEM], etc.) may be needed to identify nutrient effects. These approaches require data on other potential stressors or constraining variables. Multivariate approaches may also be useful early in the analysis to determine whether nutrient effects are significant relative to other stressors and constraints and whether/how to pursue the nutrient effects using simple univariate regressions, perhaps after stratification of systems. [See the response to Charge Question 5 for additional discussion.]
- The Guidance focuses primarily on TN and TP as the primary nutrient stressor variables. In systems where inorganic nutrients are the dominant form, some consideration should be given to inorganic N and inorganic P. It is easier to measure the inorganic forms of N and P and more and/or better data may be available for these forms. This is particularly true for ammonium and nitrate versus TN, but perhaps less so for P.
- In many regions N and P are often co-limiting to plants and microbes and stressor-response relationships based on only one nutrient are weak. Nevertheless, nutrients (N and P) may be the primary factor controlling productivity/biomass. There have been several recent papers arguing for management of N and P in combination rather than singularly (Lewis and Wurtsbaugh, 2008; Conley et al., 2009; Paerl, 2009). This would suggest development of

multivariate stressor-response relationships (e.g., multiple regression) that include both N and P as independent variables.

- A basic conceptual problem concerning selection of nutrient concentrations as stressor variables (as illustrated in the Guidance) is that nutrient concentrations directly control only point-in-time, point-in-space kinetics, not peak or standing stock plant biomass. Plant biomass is driven by nutrient supply rates (i.e., nutrient mass loads). Ambient nutrient concentrations are not necessarily good surrogates for nutrient mass loads. Relationships between nutrient mass loads and ambient nutrient concentrations are highly system-specific and depend on many factors including inflows, hydrology, bathymetry, sediment-water exchanges and chemical-biological processes. Consequently, there may be many systems for which nutrient concentrations will not be appropriate stressor variables. For such systems it may be more appropriate, and scientifically defensible, to use site-specific mechanistic models incorporating loading to determine the nutrient controls required to attain designated uses.

Findings on temporal/spatial aspects of data

- The Guidance provides little discussion regarding the temporal/spatial aspects of data needed to develop relevant stressor-response relationships. For example, the document could be strengthened by providing additional material to address the following questions. “Under what conditions might the use of mean/median or maximum/minimum values of stressor and response variables be more appropriate than discrete instantaneous measurements?” “Are there instances when the use of temporally out-of-phase stressor and response data are most appropriate (e.g., the widely recognized relationship between spring nutrient concentration and summer maximum chlorophyll concentration in lakes)?” “How can time series or longitudinal data in specific systems be used to develop more generalized stressor-response relationships?” Although such guidance may be covered in the various system specific technical manuals (U.S. EPA, 2000a, 2000b, 2001), a summary/synthesis of the major points of these earlier documents should be included in the empirical approaches document.
- The Guidance could be strengthened by including a discussion of the importance of considering “data bias” in interpreting the stressor-response relationships. This discussion should focus on how “data bias” (i.e., limits on data representativeness) might affect predictive performance and uncertainty in stressor-response relationships. Uncertainty imposed by model assumptions should also be discussed. Specifically, additional guidance is needed with regard to interpretation of data from particular environments (e.g., a set of lake data from a particular region) and its appropriateness (or lack thereof) for describing conditions more broadly. It would be helpful to include in the Guidance examples illustrating databases that would be “ideal” or appropriate for each empirical model presented. For example, information could be provided to indicate whether a conceptual model for considering nutrient criteria might be best approached using: seasonal data; data from shaded versus unshaded streams; data from wadeable streams versus big rivers; and/or long versus short term averages of data describing the stressor or the response. [See the response to Charge Question 6 for additional discussion.]

- It would be useful to include in the Guidance some discussion of how nutrient recycling and other feedbacks influence stressor-response relationships. For example, the Guidance could be strengthened by addressing the following questions. “How does recycling contribute to variability and uncertainty in stressor-response relationships?” “Are there variables that can be used in stressor-response relationships to account for recycling?”

Key recommendations concerning selection of variables to appropriately quantify the stressor and response

The Committee provides the following key recommendations to address the findings above and strengthen Section 1 of the Guidance.

1. The Guidance should be revised to elaborate upon the coupling of response variables to designated uses and the importance of ecological relevance of the stressor-response relationship. Examples should be included to further illustrate this important point. The examples should show strong nutrient-response relationships. The Guidance should be revised to include at least one example for DO as a response variable. Ideally, each method should include an example for streams/rivers and an example for lakes. If empirical stressor-response relationships are not appropriate or workable for DO in lakes, then the Guidance should state this specifically and recommend other approaches, for example, site-specific mechanistic models. There are a large number of waterbodies that are impaired by low DO and the draft Guidance is silent on this important nutrient-related problem.
2. The Guidance should be revised to include discussion of potential response variables appropriate for assessing nutrient effects on detritus-based systems.
3. The Guidance should be revised to include more discussion and advice concerning selection of variables and data needed to allow:
 - Classification/stratification of data prior to evaluation of stressor-response relationships (e.g., development of different criteria for different strata of systems).
 - Use of multivariate approaches to separate the influence of nutrients from other stressors (e.g., sediments, light regime, toxics). In general, the importance of multivariate stressor-response relationships and tools for multivariate approaches should be further discussed in the final Guidance.
4. In systems where inorganic nutrients are the dominant form, the Guidance should recommend considering inorganic N and P as nutrient stressor variables.
5. The basic conceptual problem associated with selecting nutrient concentrations as stressor variables should be addressed in the Guidance (i.e., nutrient concentrations directly control only point-in-time, point-in-space kinetics, not peak or standing stock plant biomass).
6. The Guidance should be revised to include discussion of:

- The temporal/spatial aspects of data needed to develop relevant stressor-response relationships. (e.g., are there instances when the use of temporally out-of-phase stressor and response data are most appropriate?)
- How “data bias” (e.g., data from different types of systems) might affect predictive performance and uncertainty in stressor-response relationships.
- How nutrient recycling and other feedbacks influence stressor-response relationships.

3.3. Charge Question 3. Approaches to demonstrate the distribution of and relationships among variables

Section 1 outlines methods to visualize available data. Please comment on the effectiveness of the following approaches described in the document (listed below) to demonstrate the distribution of and relationships among variables.

- a) Basic data visualization techniques**
- b) Maps**
- c) Conditional probability**
- d) Classifications**

Section 1 of EPA’s Guidance discusses exploratory data analysis and presents several methods for demonstrating the distribution of and relationships among variables. Several basic plotting techniques are presented in Subsections 1.2 – 1.6 of the document. This is followed by a description of conditional probability analysis (a statistical approach for summarizing how changes in nutrient concentrations are associated with the probability of waterbodies attaining their designated uses). The Committee was asked to comment on the effectiveness of the methods presented in this section of the Guidance.

The Committee notes that the response to Charge Question 3 necessarily overlaps with responses to other charge questions, particularly those that focus on identifying stressor-response relationships and conducting statistical analyses. We emphasize that visualization of data is of secondary importance if the data and statistical methods being visualized are inappropriate, because the visualization in itself suggests authenticity. Furthermore, the exploratory data analysis, including visualization, should be conducted prior to inferential statistical analyses of potential stressors and responses. The objectives of exploratory data analysis should be to better understand the system of interest and to maximize the accuracy and minimize the variability of the subsequent stressor-response relationships. The Committee finds that discussion of exploratory data analysis in the Guidance would be more effective if the document were reorganized and expanded to address the following points.

- The Guidance would be more effective if exploratory data analysis were included by itself in a separate section of the document following a major section on problem formulation (corresponding to the Framework in Figure 1 of this advisory report).

- Additional methods for exploratory data analysis should be described in the Guidance. These additional methods should include: the use of summary statistics; time series plots at fixed points in space; longitudinal plots at fixed points in time; bubble plots; Pearson and other types of non-parametric correlation analyses; and maps that show temporal (monthly, seasonal, inter-annual) as well as spatial patterns.
- Clear guidance is needed for identifying when and how the statistical methods and visualization techniques should be used. The strengths and limitations of the methods should also be identified. It would be useful to show several case examples that range from state-wide to local and data-rich to data-poor, and exemplify different types of aquatic ecosystems (e.g., headwater streams, large rivers, lakes and estuaries). Examples should note the strengths, limitations, assumptions and uncertainties that must be considered when using the methods to explore and visualize the data, and subsequently develop the criteria. These examples should demonstrate how nutrients can be identified as significant stressors when multiple stressors and habitat factors are present and may affect the resident communities. [See the response to Charge Question 5 for additional discussion.]
- The discussion in Subsection 1.6 of the Guidance (examination of stressor-response distributions across different classes, e.g., ecoregions) should be expanded. The subsection should discuss additional data analysis and contain examples for different spatial classifications (e.g., ecoregions, states, watersheds, systems of interest), different waterbody types (e.g., streams, rivers, lakes, estuaries) and other important physical and chemical characteristics that could affect the applicability of the nutrient criteria. [See the response to Charge Questions 2 and 5 for additional discussion.]
- The examples provided in the Guidance generally do not demonstrate a strong nutrient stressor linkage to beneficial use impairment. The stream examples show very weak correlations that have high levels of uncertainty and the examples lump data from distinctly different ecosystems where multiple factors in addition to nutrients will contribute to biotic responses. [See the responses to Charge Questions 5, 6, and 7 for additional discussion.]
- All of the statistical and visualization methods discussed in Subsections 1.2 -1.6 of the Guidance can be effective but they should be presented and used in a combined, weight-of-evidence approach because they each involve exploring the data in different ways. [See the responses to Charge Questions 1, 3, 5, and 7 for additional discussion of weight-of-evidence.]
- The Committee emphasizes the importance of choosing the biological endpoints (i.e., response variables) that respond specifically to nutrients. We note that responses of benthic indices can be related to many types of stress. We question why periphyton would not be a better receptor to measure.
- The Committee suggests that field-based species sensitivity distributions (SSDs) may be useful for nutrient criteria development. We note that SSDs have been used effectively in recent publications for establishing guidelines (or refuting them) for contaminants, temperature, and salinity (Hickey, 2008; Leung et al., 2005).

The Committee also notes the following technical edits and corrections needed in the Guidance.

- a. Clarify that macroinvertebrate richness is plotted in examples in Subsection 1.3.
- b. The Guidance (p. 7) states that “variables are equally weighted” yet only one variable is plotted in each box plot. A better statement would be: “One limitation for box plots is that all of the samples are equally weighted.”
- c. Explain probability survey design and data smoothers or provide references.
- d. Figure 7 is very confusing to those unfamiliar with scatterplot matrices; some additional explanation regarding how to “read” the horizontal and vertical axes of each graph in the matrix would help. Suggested wording: “For each scatterplot, its x-axis is the variable stated in the column in which the graph appears. Its y-axis is the variable stated in the row in which the graph appears.”

Key recommendations regarding methods for demonstrating the distribution of and relationships among variables

As discussed above, the Committee recommends that EPA restructure and revise the Guidance to strengthen discussion of methods for demonstrating the distribution of and relationships among variables. The following key recommendations are provided.

1. The Committee recommends that the Guidance be clarified by reframing Subsections 1.2 through 1.6 as a separate major section on exploratory data analysis. These subsections should follow another separate major section on problem formulation (see Figure 1 of this advisory report), and the material in Subsection 1.1 (selecting stressor and response variables) should be moved to later section(s) of the document.
2. The Guidance should be revised to include additional methods for exploratory data analysis. These additional methods should include: the use of summary statistics; time series plots at fixed points in space; longitudinal plots at fixed points in time; bubble plots; Pearson and non-parametric correlation analyses; and maps that show temporal (monthly, seasonal, inter-annual) as well as spatial patterns.
3. Subsection 1.6 of the Guidance should be expanded to include additional examples of different spatial classifications. Specifically, the classification subsection of the Guidance (Subsection 1.6) should be expanded with data analysis examples for different spatial classifications (e.g., ecoregions, states, watersheds, systems of interest), different waterbody types (e.g., streams, rivers, lakes, estuaries) and other important characteristics that will affect the applicability of the nutrient criteria. These characteristics could include, but should not be limited to, stream order, flow, velocity, canopy cover, dissolved oxygen, reference condition trophic status, channel width and depth.
4. The Guidance should be revised to clarify, early in the document, that there are many useful statistical and visualization methods that are not presented and which may be useful. The more common/well accepted methods could be listed in a table with references. It may also be useful to mention methods that are inappropriate. With each

method the associated strengths, limitations, assumptions and uncertainties should be noted to better guide the user.

5. Several case examples of exploratory data analysis should be included in the Guidance. These examples should illustrate cases ranging from national to local in scope, and data-rich to data-poor, with guidance on how best to explore and visualize the data.
6. The Guidance should contain additional information concerning statistical assumptions associated with various methods. Some guidance should be presented, as in other EPA documents (e.g., U.S. EPA, 2006a; U.S. EPA, 2006b), to address the importance of ensuring that statistical assumptions are not violated and that adequately trained statisticians, in concert with experienced aquatic ecologists and environmental modelers, evaluate the data. An example could be included to show how overly simplistic statistical analysis could not identify a relationship that became evident after complex/advanced analysis. The Committee notes that CProb 1.0, EPA's tool for conditional probability analysis was developed with the R language and environment for statistical computing. The Committee questions whether R, an open-source freeware product that is becoming very popular, is completely acceptable, in the sense that there are many R-macros in use that remain to be properly "vetted." There should be some level of assurance that the recommended R-products have been properly vetted (e.g., CProb 1.0).
7. The Guidance should contain a quantitatively based weight-of-evidence framework using multiple methods and then combining them into figures and tables for visualization. Multiple statistical methods on one data set do not equate to a reasonable weight-of-evidence that significantly reduces uncertainty. Rather, the weight-of-evidence should involve different assessment methods (e.g., different data sets, different biological endpoints, measures of habitat, etc.). This premise has been embraced by other EPA programs and the scientific community (Adams, 2003; Burton et al. 2002; Chapman, 2007; Chapman et al., 2002; Collier, 2003; Cormier et al., 2010; Fox, 1991; Linder et al., 2010; Linkov et al., 2009; Suter et al., 2002; Suter et al., 2010; U.S. EPA, 2000c; Weed, 2005; Wickwire and Menzie, 2010).
8. The Guidance should contain a discussion of how the stressor/response variables to be used are linked to one another in space and time for further analysis. There is no mention of this in Subsection 1.1 of the Guidance. The Committee questions whether it should be assumed that stressor/response measurements always occur at the exact same time and locations. It is also important to ensure that high flow events have been measured. It is well established that most nutrient loading occurs during high flows. Therefore, the influence of seasonality and smaller-scale temporal dynamics (e.g., storm events) and the importance of linking stressor and response variables with these factors should be at least noted in the Guidance.
9. The Guidance should discuss the use of modeled data (e.g., land use characterization, hydrology, surface runoff, receiving water quality) for estimating nutrient concentrations/exposures. The pros and cons associated with the use of such data should

be briefly mentioned. There are a number of EPA-supported models that have been widely used and documented in recent years (e.g., HSPF, BASINS, QUAL2K, WASP, AQUATOX, and Chesapeake Bay WQSTM). Some of these are integrated watershed models designed to represent inflows and non-point source runoff loads. Typically, they are used as a “loading engine” for a receiving water quality model. Receiving water quality models describe load-response relationships for exposures (ambient nutrient concentrations) and effects (e.g., plant biomass, zooplankton, dissolved oxygen), and response parameters that represent use impairment. Some receiving water quality models can address multiple stressors. For example, they can include N, P and silicon as potentially limiting nutrients, sediment (suspended solids) and its influence on underwater light attenuation, incident solar radiation, temperature, and grazing pressure. It is possible to use these water quality models to describe exposure (in terms of ambient nutrient concentrations) but in the absence of empirical data, this would not be scientifically defensible.

10. The Committee recommends that EPA re-evaluate many of the figures in the Guidance (e.g., 4-8, 13-16, 21, 25, and 26). These figures show widely varying data that demonstrate weak relationships.
11. The Committee recommends that the Guidance be revised to clearly indicate the statistical assumptions and uncertainties that should be taken into consideration when using methods described in the document. Some of the methods are complex and their descriptions lack transparency. Guidance should be provided to ensure that states and other users have an understanding of the data requirements and limitations, the associated statistical assumptions, and uncertainties.
12. The document should contain a discussion of ways to examine the independent and interactive effects of the variables to be considered in deriving numeric nutrient criteria (i.e., provide a menu of options to examine independent and interactive effects). Statistically, there are several well known ways to address additional contributing variables, such as total suspended solids (TSS). One way would be to use a multiple regression model or analysis of covariance (ANCOVA). This would be a valuable approach, as the additional variables are to be treated as continuous variables, and interaction terms could be added to see if the effects of TN/TP were dependent on levels of TSS, which would be expected, particularly for TP. If one treats the additional variables as factors then an analysis of covariance (ANCOVA) model would be most appropriate. For example, if there were a TSS threshold of interest, a relationship could be established between an invertebrate endpoint and nutrient levels above and below a critical TSS threshold. This would allow one to examine independent and interactive effects.
13. The Guidance should mention the potential benefits of using proxy variables in an initial approach for exploratory analysis of data trends. For example, variable data sets that are easier and more practical to obtain, such as more generic point/nonpoint source loadings or commonly sampled stressor/response variables, might be used as proxy variables for exploratory analysis of data trends. This is briefly mentioned in Subsection 3.1 of the

Guidance (auxiliary model), but such an approach could also be useful for selecting stressor/response variables early in the process (Section 1).

3.4. Charge Question 4. Methods for assessing the strength of the cause-effect relationship

Section 2 of the draft guidance document describes methods for assessing the strength of the cause-effect relationship represented in the stressor-response linkage. Please comment on whether the draft guidance document adequately describes how conceptual models, existing literature, and empirical models can be used to assess how changes in nutrient concentration are likely to cause changes in the chosen response variable.

Section 2 of the Guidance provides a summary of how the strength of tentative stressor-response pairings from step 1 can be assessed. Certainly, as indicated in the Guidance, conceptual models and existing literature can be used to support relationships that will be explored with the statistical analysis that follows. At this stage of the analysis, stressor-response relationships for which there is no reasonable conceptual model or literature to explain the underlying mechanisms would be of limited value for setting criteria. Such relationships should be set aside. The Committee finds that the Guidance should be improved by incorporating revisions to address the following points.

- Section 2 of the Guidance does not address the strength of the stressor-response relationship, but rather support for the stressor-response relationship that is to be explored statistically. “Support” for the stressor-response relationship, rather than “strength” of the relationship, would be a better term to use in this section of the Guidance, because strength refers to the “tightness” of the statistical association between stressor and response. Use of the term “support” would, therefore, be less confusing to the user.
- It is not clear why information from mechanistic models was not included in Section 2 of the Guidance. Because mechanistic models can integrate information on the interactions of major ecosystem processes to derive quantitative estimates of effects, they too should be discussed as a possible way of supporting the stressor-response relationship. [See the response to Charge Question 1 for additional discussion.]
- Additional discussion of conceptual model selection (with specific examples) would be helpful. There are many ways to select a conceptual model and various model selection criteria that could be applied. An expanded discussion of these issues could help provide further background for a user of the document. Specific examples could be followed in later sections with discussion of statistical approaches to analyze the strength of the potential cause-effect relationships. In other words, EPA could provide an example from beginning to end that a user could follow from step to step. [See the response to Charge Questions 1, 2, and 6 for additional discussion.]
- One important aspect of finding support for stressor-response pairings is that without formal training and practical experience in the sciences, especially biological and ecological

disciplines, it is difficult to fully understand the complex relationships that may be identified. The Guidance should state the level of statistical and ecological expertise needed to use the document. [See the response to Charge Question 1 for additional discussion.]

- Structural equation modeling (SEM) and Propensity Score Analysis (PSA) are techniques that can be used to organize and evaluate relationships between nutrients and response variables when extensive data are available. SEM might be more useful in tracing pathways (it is also called path analysis) of cascades that are initiated by excess nutrients than in defining criteria candidates. A relevant example of SEM is really needed in the Guidance if this approach is to be considered by users. PSA, on the other hand, seems to be useful for sorting out groups that share covariates but may have unique nutrient characteristics. Such sorting could lead to a clearer understanding of how nutrients function amid multiple covariates. The example of PSA in the Guidance appendix is helpful, but further explanation of how to interpret the results of the analysis is needed. An analysis such as PSA might really belong in a later section of the document, as it is used for data analysis rather than supporting potential relationships.
- A reasonable way to assess nutrient effects might be to split data sets (through PSA, principal components analysis, and/or cluster analysis) to enable a system-specific analysis (or analysis of a small groups of sites). Given the many factors that affect streams and rivers, system-specific analysis really provides an assessment of whether altering nutrient concentrations would have the desired effect on the biotic communities present. Possible factors to consider in splitting data for streams and rivers might include, for example, stream order, flow, velocity, canopy cover, dissolved oxygen, bottom type, channel width, habitat, and depth. [See the responses to Charge Questions 2 and 5 for additional discussion.]
- Experimental validation of causal relationships between nutrient and response variables should be approached with caution. The final method discussed on page 17 of the Guidance is experimental validation of causal relationships between selected nutrients and response variables. The Committee notes that this approach could be helpful *in situ* and there are examples of this (Benstead et al., 2009; Cross et al., 2006; Cross et al., 2007; Greenwood et al., 2007; Peterson et al., 1985; Slavik et al., 2004; Stockner and Shortreed, 1978), but mesocosm or laboratory experiments are of limited use in validating causal relationships between nutrient and response variables. For example, Hill and Fanta (2008) and Hill et al. (2009) showed in Oak Ridge National Laboratory artificial streams how P and light interact. This type of work provides fundamental data on how stream algae respond to P and light, and supports basic conceptual models of this relationship. These and previous studies have shown that, under controlled conditions it takes very little P to maximize algal growth given high light and this fundamental relationship could be applied to any stream in the U.S. However, the relationship is often not observed in data sets because other factors such as bottom substrate, turbidity, canopy cover, hydrology, or depth limit algal production. Therefore, caution must be used in applying a relationship from a subset of data to all data from systems that do not have the same or similar conditions. [See the response to Charge Question 6 for additional discussion of model validation.]

Key recommendations concerning methods for assessing the strength of the cause-effect relationship represented in the stressor-response linkage

In light of the comments and findings discussed above, the Committee provides the following key recommendations to improve Section 2 of the guidance.

1. Section 2 of the Guidance would be more appropriately titled “Assessing Support for the Potential Cause-Effect Relationship.”
2. Mechanistic models should be discussed in the Guidance as one way of supporting the stressor-response relationship.
3. The discussion of conceptual models should be expanded to address various criteria for model selection, and additional examples should be included.
4. The level of statistical and ecological expertise needed to use the Guidance should be stated.
5. Structural Equation Modeling (SEM), offered as an alternative model for exploring nutrient-ecosystem response, should be more fully explained with clear examples.
6. Further explanation of how to interpret the results of propensity score analysis (and additional examples) should be included in the Guidance.
7. Experimental validation of causal relationships between nutrient and response variables should be approached with caution because a number of factors can affect the response of a system to nutrient enrichment.

3.5. Charge Question 5. Statistical methods to analyze the data

Section 3 of the draft guidance document outlines statistical methods to analyze the data to estimate stressor-response relationships. Please comment on the appropriateness of the methods outlined in the document (listed below) for describing stressor-response relationships associated with nutrient pollution. What approaches would you recommend that could effectively address indirect pathways of adverse effects? What recommendations do you have to address the effects of confounding variables and uncertainty in the estimated relationships?

- a) Simple linear regression
- b) Quantile regression
- c) Logistic regression
- d) Multiple linear regression
- e) Non-parametric changepoint analysis
- f) Discontinuous regression models

The Committee notes that EPA's draft Guidance appropriately states that numeric nutrient criteria should be based on predictive stressor-response relationships so that changes in the level of stressor variables will result in predictable ecosystem responses. However, based on examples presented in the draft document and elsewhere, a large degree of unexplained variation can be encountered when attempting to use empirical stressor-response approaches to establish criteria. The final Guidance needs to clearly indicate that such unexplained variation can present a significant problem to this method of developing numeric criteria. Further, the final document should emphasize that statistical associations may not be biologically relevant and do not prove cause and effect. However, when properly determined, statistical associations can be very useful in supporting a cause and effect argument as part of a weight-of-evidence approach to criteria development. To this end, the final document should provide greater detail on the implementation of statistical procedures and development of other supporting information to minimize the degree of unexplained variation and maximize the potential for the empirical stressor-response approach to result in useful numeric nutrient criteria. EPA should also provide guidance on the strength of stressor-response relationships needed to support criteria development using an empirical stressor-response approach. Further, because nutrients are essential elements, the application of statistical methods must consider both nutrient deficiency and excess. Clear links between response variables and designated uses are needed to ensure that both of these possible impairment types are addressed. The Committee provides the following findings and comments concerning the appropriateness of statistical methods in the Guidance, approaches to address indirect pathways of adverse effects, and ways to address the effects of confounding variables and uncertainty in the estimated relationships.

Findings on appropriateness of listed statistical methods

- The Guidance represents a substantial step forward in describing statistical methods that can be used in deriving nutrient criteria based on stressor-response relationships, but more information is needed to describe supporting analyses necessary for application of the methods. The six methods identified in the Guidance generally provide appropriate options for describing stressor-response relationships that may be sufficiently predictive to support setting numeric nutrient criteria. As many examples in the draft document illustrate, there is likely to be considerable variability in stressor-response nutrient relationships and, thus, in the predicted outcome or response to both target setting and response to mitigation efforts. Therefore, the document must provide more information on the supporting analyses needed for each method to correctly identify useful predictive relationships, and acknowledge that the use of these statistical methods alone cannot provide sufficient evidence of a cause-effect relationship. [See the response to Charge Question 1 for additional discussion.]
- The use of non-parametric change point analysis and discontinuous regression analysis must be associated with biological significance and the designated uses to be protected by numeric nutrient criteria. As stated previously, response variables must be associated with designated uses in all cases. This has implications for the use of non-parametric change point analysis (nCPA) and discontinuous regression in criteria development. The Guidance indicates that, because these procedures may identify breakpoints in nutrient responses that can serve as criteria thresholds, the methods may be used when designated use thresholds are not

available. However, although these methods may be able to identify and characterize breakpoints, such breakpoints may not necessarily have any biological significance, nor will they necessarily be related to designated uses that are to be protected by numeric nutrient criteria. Use of these methods must be associated with designated uses. [See the responses to Charge Questions 1, 3, 6, and 7 for additional discussion of the importance of biological significance and linkages to designated uses.]

- The statistical methods in the Guidance require careful consideration of confounding variables before being used as predictive tools. For example, the appropriate use of bivariate regression methods requires additional efforts through classification or other means to minimize the influence of other potential causal variables so that an acceptable level of confidence in the predictive power of the relationship can be achieved. Without such information, nutrient criteria developed using bivariate methods may be highly inaccurate. Multiple linear regression is an appropriate way to incorporate covariates into a single analysis, although predictive power using this procedure must also be evaluated carefully. [See the responses to Charge Questions 1, 2, 3, and 4 for additional discussion.]
- As previously noted, because plant biomass is driven by nutrient supply rates (mass loads), a potential conceptual problem exists with the selection of nutrient concentration (often used in the Guidance) as a stressor variable. This problem illustrates the importance of careful characterization of confounding variables. Nutrient concentrations control only point-in-time, point-in-space kinetic rates, not peak or standing stock plant biomass. Plant biomass is driven by nutrient supply rates (mass loads). Furthermore, nutrient concentrations may not be direct surrogates for nutrient mass loads. Relationships between nutrient mass loads and ambient nutrient concentrations are highly system-specific and depend on many factors. Consequently, in some circumstances, statistical methods alone will not adequately account for the influence of confounding variables and reduce uncertainties. In other words, the Committee anticipates situations in which stressor-response statistical analysis may not lead to a scientifically justified endpoint. [See the responses to Charge Questions 1 and 2 for additional discussion.]
- In order to be scientifically defensible, empirical methods must take into consideration the influence of other variables. On page 22 of the Guidance, the authors acknowledge that factors co-varying with TP concentrations may explain a portion of the 61% of the variation in log chlorophyll a concentrations apparently attributable to log TP concentrations. This presents a critical challenge in the use of empirical methods as a means of establishing numeric nutrient criteria because it means that controlling TP concentrations may have no potential to yield reductions in chlorophyll a concentrations. Thus, in order to be scientifically defensible, empirical methods must take into consideration the influence of other variables.
- It is important to discuss strength-of-relationship concerns and how results of empirical approaches should be interpreted in the context of criteria development. Figure 13 on page 24 of the Guidance provides an illustration of the challenges facing the users of simple linear regression (SLR) and other empirical approaches. In this case, total macroinvertebrate species richness was regressed against total N concentrations obtained from EPA

Environmental Monitoring and Assessment Program (EMAP) West Xeric Region streams. Overall, total species richness declines with increasing TN concentration in these stream data. Applying SLR to log-transformed data yields a statistically significant slope $-3(\log(\text{TN}))$ at $p < 0.001$. However, a large degree of scatter remains, as indicated by the R^2 value of 0.19. A TN “candidate criterion” of 320 ug/L is obtained by finding the point of intersection of an assumed designated use total species richness threshold of 40 and the mean regression line $\log(\text{TN}) = \sim 2.5$. Unfortunately, the points where the lower and upper 90% prediction interval lines cross a species richness threshold of 40 cover a TN concentration range from about $\log(\text{TN}) = 1.25$ to $\log(\text{TN}) = 4$ based on inspection of Figure 13. This corresponds to a TN concentration range of 16 ug/L to 10,000 ug/L. It is important to understand the management consequences of this considerable uncertainty. Also, the fact that the relationship in Figure 13 is both statistically significant (i.e., some trend is evident) and has a low $R^2 = 0.19$ (much scatter also exists) presents an opportunity to discuss strength-of-relationship concerns and how such results should be interpreted in the context of criteria development. [See the responses to Charge Questions 1, 2, and 6 for additional discussion.]

- As previously discussed, relationships for streams may be more complex than for lakes and must account for multiple stressors/conditions and/or stream ‘types’ or conditions, and then be applied appropriately. For example, a stratified approach that considers attributes known to be important for a particular environment (lake, stream, estuary) such as canopy, habitat, etc., should be considered. It is also important to deal with both N and P simultaneously and to consider inorganic N and dissolved P. An exercise in Section 3 of the Guidance illustrates the relationship between chlorophyll a and TP in lake water. This is perhaps the easiest and most well known example of stressor-response in natural waters, and specifically in lakes. This relationship is less certain in streams because they are more heterogeneous than lakes. The Guidance also inappropriately assumes that only nutrients affect taxa. The functionality of aquatic food chains is not solely dependent on one type of biota, sediment type, or single nutrient concentration. There are multiple stressors affecting receptors in a number of ways, over the landscape and watershed in question. Confounding variables are not sufficiently addressed in the Guidance. As previously discussed, approaches that address multiple factors, such as a stratified (or hierarchical) approach that considers other attributes known to be important (e.g., canopy, habitat, multiple nutrients) should be considered. [See the responses to Charge Questions 1, 2, and 3 for additional discussion.]
- The Guidance could be improved by replacing many examples that provide low explanatory power. Concerns include examples with very low R^2 indicating low explanatory power and incomplete description of large uncertainty. These examples indicate that variables other than TP or TN have a greater impact on response, which implies that reducing TP or TN may not have the desired effect. Helpful examples could include: one with a response variable indirectly associated with a designated use; and one from a state where a Secchi depth is used as a criterion for water quality (otherwise Subsection 3.1, paragraph 2 sounds extremely vague). [See the responses to Charge Questions 1 and 3 for additional discussion.]
- Parametric (e.g., Pearson) and non-parametric (e.g., Spearman’s rank, Kendall’s tau) correlation analyses can assist in identifying the influence of confounding variables, but these

methods are not specifically mentioned in the Guidance. Both of these types of analyses would be helpful in exploratory data analysis.

- The Guidance lacks sufficient discussion of the importance of variable selection and data characteristics to ensure useful implementation of the statistical procedures. In addition to its incomplete treatment of confounding variables, the Guidance lacks sufficient discussion of the importance of variable selection and data characteristics to ensure useful implementation of the statistical procedures. Many of the non-parametric procedures rely upon bootstrap procedures to obtain confidence intervals. This underscores the importance of using a probability sampling procedure. The implications of different sample sizes should also be more fully discussed. The Guidance states that an advantage of using quantile regression (QR) is that it can provide direct estimates of percentiles of a distribution of Y values at given X values, which may be better estimates of these values than provided by SLR when the assumptions of SLR are not met. Uncertainty associated with estimating extreme quantiles from "small" sample sizes is appropriately identified in the Guidance as a concern for QR. However, small sample size is likely to present considerable challenges to any nutrient criteria development approach, and the Guidance should provide a discussion of how the amount of data may affect the utility of empirical stressor-response approaches.
- In the Guidance, more information must be provided regarding regression assumptions, limitations, and diagnostic procedures. Although the Guidance should not be expected to provide the same level of detail on the implementation of statistical procedures contained in a statistics textbook, more information must be provided regarding regression assumptions, limitations, and diagnostic procedures. The appropriateness of the regression methods will depend on the assumptions and use restrictions of each method. Although the document discusses many of the important assumptions, it would be helpful for this information to be clearly summarized in a table. The table could include headings for each method such as use, inherent assumptions, and specific remarks. In addition, the importance of regression diagnostic procedures should be emphasized. Examples and specific references to additional sources of information should be provided. This could include evaluating data with and without outliers or unusual values.
- More guidance is needed on the interpretation of results from the listed regression procedures. For example, how does one decide whether the results of quantile regression are adequate for criterion development? In the discussion of logistic regression (p. 28, last paragraph), nothing is said about whether the coefficients in this analysis are significantly different from zero, or about the proportion of total deviance accounted for by the regression. For multiple linear regression (p. 31) a reference (e.g., Kutner et al., 2004) is needed for Akaike and the other methods listed in the third paragraph of the page.
- The role of, and options for, data transformations should receive considerably more discussion in the Guidance. Data transformation may be appropriate in the development of stressor-response relationships using regression analysis, but this topic (including the associated back-transformation of slope estimates and confidence intervals to yield criteria) should be more carefully developed. In reading the document, one wonders when the log-transformation should be used to establish linear relationships or whether curvature that may

be present in raw data (with no transformation) should be characterized. In addition, the document does not describe the range of data transformations that may be appropriate, instead focusing only on the log-transformation. For example, regarding the nCPA presented in Figure 24, would the analysis give the same result if it were based on TP data that were not log transformed? It is not clear in the Guidance when to apply a linear method to transformed data or a changepoint or discontinuous regression method to untransformed data. As a start, a table like Table 6.5, "Linearizing Transformations" in Weisberg (1985), p. 142 could be included in the Guidance, along with some explanation. Finally, "back-transformation" has the potential to introduce bias into the criterion value if done incorrectly, and this topic should be treated more completely to minimize that potential.

- The Guidance appropriately points out that regression relationships should generally not be used to project conditions beyond the range of conditions used to develop the relationships.
- The Guidance is silent on how and when the results of multiple statistical procedures may be integrated to support numeric criteria as an alternative to selecting "the best" model in situations where a clearly preferred model does not emerge from the analysis. Rather than presenting the statistical techniques strictly as alternatives, the document could describe how these procedures can complement each other and provide a more robust picture of what an appropriate criterion should be. For example, a linear regression whose residuals appear to show the presence of curvature might also be evaluated with nCPA to evaluate the range of stressor values over which the curved response occurs. Model averaging (Burnham and Anderson, 2002) is recommended for use with multiple regression when slight changes in the data lead to different final models.
- The Guidance provides a limited list of the statistical methods that could be explored to yield useful criteria. If a data set includes censored values, maximum likelihood estimation can provide an alternative to bivariate or multivariate linear regression that avoids the need to substitute values such as one-half the detection limit for nondetects. In addition, parametric multivariate methods including principal components analysis (PCA), discriminant function analysis, cluster analysis, and others may also provide a useful means of incorporating covariates in a stressor-response relationship. PCA may be used to describe a group of correlated variables through a single equation. A number of non-parametric linear regression approaches are also available, including the family of Kendall tests available from the U.S. Geological Survey (Helsel and Hirsch, 1992; Helsel et al., 2006)
- A key and an associated appendix of case studies should be included in the Guidance to explain the appropriate use of statistical methods and inherent assumptions and uncertainties. Since choice of method(s) will depend on the nature of the data being modeled and on the underlying assumptions, it would be useful to include in the Guidance some kind of key giving an explanation of "which method to use when," with the inherent required assumptions and uncertainties associated with each method. Better use of case studies (from lakes, streams, estuaries) in an appendix could help show "why one approach works in a particular situation and another does not." One case study should estimate the stressor-response relationship when the data form a "wedge-shaped" scatterplot, a pattern commonly observed in nutrient stressor-response relationships.

- Statistical rigor is essential to the development of scientifically defensible criteria. Simplistic application of approaches in the Guidance can lead to stressor-response relationships with poor predictive power and result in inappropriate numeric nutrient criteria. Therefore, EPA will need to provide technical support and training to states for use of these statistical methods. As previously stated, the use of bivariate methods (including nCPA) must involve a careful examination of potentially confounding variables to develop support for a predictive relationship. In order to properly evaluate the predictive power of empirical stressor-response relationships, uncertainties associated with each method used must be identified and quantified. Simulated data sets designed to contain specific properties that may be encountered by users of the Guidance could help communicate how these statistical procedures behave over a variety of data set characteristics (e.g., a range of uncertainty in the regression slope).
- The need for statistical rigor applies to both the strength and the form of the relationship among variables (i.e., evaluating the presence of curvature in a stressor-response relationship). The Guidance should describe the goal of data analysis as one of characterizing not only the strength of relationship but also its form, and the evidence supporting conclusions about both. This is particularly relevant when deciding to use nCPA or discontinuous regression to characterize a relationship. A more complete approach should be presented to test the hypothesis that a true data threshold exists.
- EPA should provide guidance on how the degree of relationship (indicated by R^2 , residuals analysis, and other evidence) relates to establishing predictive stressor-response relationships. At a minimum, EPA should describe how to address the important question of “when is the evidence insufficient to support using an empirical stressor-response approach?” One suggestion is to better incorporate the EPA data quality objectives process into the Guidance (see U.S. EPA, 2009c).

Findings on indirect pathways

- The Committee notes that, with respect to approaches used to address indirect pathways of adverse effects, the Guidance currently does not contain a clear definition of the term “indirect pathway.” One definition follows in part from the caption of Figure 10 in the Guidance:

“Simplified diagram illustrating the causal pathway between nutrients and aquatic life use impacts. Nutrients enrich both plant/algal as well as microbial assemblages, which lead to changes in the physical/chemical habitat and food quality of streams. These effects directly impact the insect and fish assemblages. The effects of nutrients are influenced by a number of other confounding factors as well, such as light, flow, and temperature.”

This description appropriately indicates that nutrient concentrations directly impact plant/algal and microbial communities and indirectly impact insect and fish assemblages through impacts on plant/algal and microbial communities. As discussed previously, a challenge in using empirical approaches is establishing sufficient evidence to support

conclusions of cause and effect so that relationships with adequate predictive power can be developed. The farther removed the response variables are from immediate responses of variations in nutrient concentrations, the more difficult it may be to demonstrate a useful degree of predictive power. Guidance on the acceptable degree of uncertainty, and/or the desired level of predictive power, may help users of the Guidance identify useful relationships whether or not pathways are direct or indirect. On the other hand, empirical methods alone are unlikely to effectively address indirect pathways of adverse effects. This requires appropriate conceptual and mechanistic models, adequate site-specific data, and experienced professional judgment.

Findings on confounding variables and uncertainty

- As previously discussed, exploratory data analysis that includes classification of data by similarities in confounding variables prior to the evaluation of stressor-response relationships may improve the predictive power of the relationships if sufficient data are available. Incorporation of confounding variables in a multiple regression is also appropriate. [See the responses to Charge Questions 1, 2, and 3 for additional discussion.]
- Because uncertainty in the appropriate criterion value cannot be eliminated, it is prudent to evaluate the potential consequences of varying degrees of uncertainty in a stressor-response relationship on the resulting criteria and management objectives. This may be accomplished in part through the use of the EPA data quality objectives (DQO) process or a similar approach. [See the responses to Charge Questions 1, 3, 6, and 7 for additional discussion of evaluating uncertainty in the stressor-response relationship.]
- References should be provided to direct the reader to more information on regression diagnostics including leverage statistics and information on influential points. This would assist the user in addressing uncertainties associated with these values. (One useful textbook is Kutner et al., 2004; there are many others.)
- The Guidance should emphasize the importance of careful pairing of potential stressor and response variables. Uncertainty in a stressor-response relationship may be increased if incompatible data types are paired. For example, combining a seasonal average chlorophyll a concentration calculated from multiple samples with a TP concentration obtained from a single grab sample could introduce considerably more uncertainty than if both variables represent seasonal averages. There are places in the Guidance where measured values are presented without a clear description of the spatial or temporal components that the value represents (on p. 22, for example, 15 ug/L chlorophyll a is presented as a threshold between mesotrophic and eutrophic conditions without indicating the applicable averaging period). The Guidance should consistently include such information in its descriptions of various components of the threshold identification and criteria-setting process.

Key recommendations concerning statistical methods in the Guidance

The Committee provides the following key recommendations to address the comments and findings presented above.

1. In the Guidance, EPA must provide more information on the supporting analyses needed for each statistical method to correctly identify useful predictive relationships, and acknowledge that the use of these statistical methods alone cannot provide sufficient evidence of a cause-effect relationship.
2. The Guidance should indicate that response variables must in all cases have biological relevance and be associated with designated uses.
3. The Guidance should emphasize that use of the statistical methods requires careful consideration of confounding variables before the methods can be used as predictive tools. As discussed above, further information on how to address confounding variables should be included in the document.
4. The Guidance should contain additional discussion of the potential consequences of varying degrees of uncertainty in a stressor-response relationship on the resulting criteria and management objectives. This may be accomplished in part through the use of the EPA DQO process or a similar approach.
5. The Guidance should contain more information on approaches that address multiple factors, such as a stratified (or hierarchical) approach that considers other attributes known to be important such as canopy, habitat, multiple nutrients, etc.
6. EPA should consider replacing the examples in the Guidance that provide low explanatory power.
7. As discussed above, the Guidance should contain additional specific information (or guidance on where to find it) on:
 - The use of parametric (e.g., Pearson) and non-parametric (e.g., Spearman's rank, Kendall's tau) correlation analyses.
 - The importance of variable selection (including careful pairing of stressor and response variables) and data characteristics to ensure useful implementation of the statistical procedures.
 - Regression assumptions, limitations, and diagnostic procedures.
 - Interpretation of results from the listed regression procedures.
 - The role of, and options for, data transformations.
 - How and when the results of multiple statistical procedures may be integrated to support numeric criteria.
 - An appendix of case studies to explain the appropriate use of statistical methods and inherent assumptions and uncertainties.
8. The Committee recommends that EPA consider providing technical support and training to states and tribes to assist them in the use of the statistical methods in the Guidance.

9. The Guidance should describe the goal of data analysis as one of characterizing not only the strength of relationship but also its form, and the evidence supporting conclusions about both.
10. The Committee emphasizes that EPA should provide guidance on how the degree of relationship (indicated by R^2 , residuals analysis, and other evidence) relates to establishing predictive stressor-response relationships for numeric nutrient criteria development.

3.6. Charge Question 6. Evaluating the predictive accuracy of stressor-response relationships

Section 4 of the draft guidance document describes how to evaluate the predictive accuracy of estimated stressor-response relationships. Please comment on the appropriateness of approaches in Section 4 of the guidance document and factors to consider in evaluating and comparing different estimates of the stressor-response relationships and selecting those most appropriate for criteria derivation.

Overall, the Committee notes that Section 4 of the Guidance lacks the detail provided in other sections and, as discussed below, needs improvement. The Committee finds that this section is particularly important because it addresses the reliability or “validity” of the approaches considered. The Guidance should provide information to help managers decide which criteria derivation approach to use (e.g., analysis of best fit by regression or some other means). These are important decisions and additional guidance on how to select the best tools would be helpful. If the proposed methods yield inaccurate results, this could lead to inappropriate or ineffectual solutions to comply with Clean Water Act goals. The Committee provides the following findings and comments in response to Charge Question 6.

- The Committee finds that a clear framework and criteria for statistical model selection is needed in the Guidance. This framework should include a set of decision tools and criteria used not only to determine which model fits best, but also to decide whether the stressor-response approach to criteria development is appropriate. Model selection criteria should include:
 - Capability of model to consider cause-effect and direct-indirect relationships between stressor and response;
 - Biological relevance;
 - Relevance to known mechanisms and existing conditions; and
 - Capability of model to predict probability of meeting designated use categories.

Findings on model validation

- More detail is needed in Subsection 4.1 of the Guidance to describe model validation techniques. In the Guidance there is limited discussion of validation of empirically derived stressor-response relationships. This is a critical component. Validation can be defined as demonstrating the accuracy of the model for a specified use. Within this context, accuracy is the absence of systematic and random error - in ecology they are commonly known as

trueness and precision respectively. All models are by their nature incomplete representations of the system they are intended to model but, in spite of this limitation, models can be useful. Many discussions of mathematical modeling discriminate between model confirmation (i.e., plausible, worthy of belief) and model verification (i.e., shown to be true). Given the nature of the environmental stressor and response data, such stressor-response models cannot be fully validated. EPA should provide much more detailed validation guidance including four components:

- *Conceptual validation* concerns the question of whether the model accurately represents the environmental system. This is largely qualitative and requires consideration of the strength of the cause-effect relationships. To consider whether the empirical model assumptions are credible, a conceptual model of factors affecting the stressor-response relationship should be developed. For each of the proposed methods, guidance should be provided with examples showing the mechanistic reasoning behind the cause-effect assumptions and the direct-indirect responses of the stressor and response variables. This should be supported by some experimental evidence relevant to the context in which it is used (e.g., data needs appropriate for lakes may be different than for streams). For each application of the empirical model, experimental or observational data in support of the principles and assumptions should be presented and discussed.
- *Algorithm validation* concerns the translation of model concepts into mathematical formulae. It addresses questions such as: "Do the equations represent the conceptual model?" "Under which conditions can simplifying assumptions be justified?" "Is there agreement among the results from use of different methods (e.g., different response variables) to solve the model?" For ecological stressor-response models, these questions relate to the adequacy of the empirical models themselves for describing the effects of nutrient enrichment on aquatic life.
- *Functional validation* concerns checking the model against independently obtained observations. For this type of validation the Guidance recommends using additional empirical observations (an alternative experimental data set). However, this requires more information than is usually available, and expected results may not be the same from one data set to another given the heterogeneity of environmental systems. Such data cannot truly validate the stressor-response model per se, but may produce valuable insights. Guidance is needed to answer questions such as: "what are the minimum data requirements for validation?" and "if one is working with a limited data set, how does one consider the tradeoffs between using more data in the original analysis and reserving data for validation?"
- *Software validation* concerns the implementation of mathematical formulae in various computer software. This validation takes into consideration the possible effects of software-specific factors on the model output (e.g., with regard to precision). For example, problems have been documented with regard to performing statistical analyses with some spreadsheet programs or open source codes.

- The Committee finds that the concept of “validation” as presented in Subsection 4.1 of the Guidance is inconsistent with other EPA guidance (U.S. EPA, 2009a) on development, evaluation, and application of models. In EPA’s other modeling guidance, model evaluation includes model corroboration, and sensitivity and uncertainty analyses. Model corroboration is defined as quantitative and qualitative methods for evaluating the degree to which a model corresponds to reality. In practical terms, this is the process of “confronting models with data.” In some disciplines, this process has been referred to as validation. EPA prefers the term “corroboration” because it implies a claim of usefulness and not truth. The Committee finds that this is not just a semantic distinction and we recommend that Subsection 4.1 of the Guidance be revised so that it is consistent with other EPA guidance (U.S. EPA, 2009a).
- The use of data quality objectives (DQOs) should be discussed in Subsection 4.1 of the Guidance. The DQOs should be established at the beginning of the criteria development process (i.e., Guidance step one) but they can also be used to evaluate the potential stressor-response models (Guidance step four). The discussion of DQOs should address levels of uncertainty, Type I and Type II error rates, and the extent to which each model can predict the probability of meeting designated use categories. [See the response to Charge Question 1 for additional discussion of DQOs.]
- In Subsection 4.1, more detailed guidance should be provided on the use of randomly or non-randomly selected data sets to help address questions about how much data should be held out of the original analysis to adequately support the validation process. Subsection 4.1 is intended to describe how to validate “the predictive performance of different models.” Recommended approaches include: a) collecting new samples; and b) holding out a subset of the original data from the analysis. Reserved samples may be selected randomly or non-randomly. Authors of the Guidance appropriately note that a potential problem with using random subsetting is that the covariance structure of the data is likely to be the same, so that this approach may not provide an independent test of the predictive power of a relationship. As stated in the Guidance, reserving a non-random subset may be a useful alternative. Some discussion of the relative size of calibration and validation data sets is warranted.
- The concept of “best fit” needs elaboration in the Guidance. Best fit is based on the assumptions made and the model developed and, as previously discussed, there may be considerable uncertainty even if a model is thoroughly and carefully developed. Assumptions that are incorrect or incomplete will lead to erroneous criteria. Authors of the Guidance understand this, and state that relationships can be confounded by unsampled or unmodeled factors. This statement is true and it should be more fully discussed, and perhaps given much greater weight in each section. EPA should consider whether each example in the Guidance should be accompanied by a discussion of possible confounding issues and what might be missing. The concept of uncertainty, its effect on model results, and ways to at least understand the level of uncertainty are not fully described in the Guidance.
- The Guidance should contain additional information to assess the closeness of root-mean-square predictive error (RMSPE). The RMSPE as presented on p. 42 of the Guidance is a well-recognized measure of how well a statistical model does in predicting response values from given stressor values. Figure 27 of the Guidance gives an example where the RMSPE

for the calibration data set was 0.28, while the RMSPE for the held-out validation data (from a particular State) was 0.27. Many would agree that those two RMSPEs are "close." But it is necessary to answer the question, "how close is close?" No further statements appear in the Guidance about how to assess the closeness of two RMSPEs. Comparing 0.28 with 0.27 in a single example does not help users of the Guidance extend this example to their own data sets. It might be possible to take a bootstrap approach with regard to the calibration data set to derive an actual distribution of values for the calibration RMSPE against which the RMSPE of the validation data set could be compared. The Guidance does not address this. In addition, it is appropriate to characterize fit quality using other information such as R^2 , residuals analysis, and regression results.

- With regard to validation, nutrient criteria should result from weight-of-evidence from the application of multiple empirical approaches considering multiple response variables and other approaches as appropriate. The nutrient criteria values determined after considering validation and uncertainty may vary significantly from technique to technique or from response variable to response variable. The Committee suggests that EPA consider the range of responses and concordance among analyses/models and, as stated previously, establish linkage between response variables and designated use categories. The Guidance should discuss model averaging and should recommend considering the range of responses as a measure of overall utility of the empirical approach. In addition, the Guidance should more strongly advocate decision making based on weight-of-evidence from multiple empirical and other approaches. [See the responses to Charge Questions 1, 3, 5, and 7 for additional discussion of weight-of-evidence.]

Findings on qualitative assessment of the uncertainty of the estimated stressor-response relationship

- The Committee finds that Guidance Subsection 4.2 (addressing uncertainty) is too brief. Given the importance of this cross-cutting issue, a section on uncertainty is needed for each of the steps outlined in the Guidance, and uncertainty should be summarized at the end of the document.
- Subsection 4.2 of the Guidance should address both qualitative and quantitative estimates of uncertainty. Given reasonable expectations for data availability and inevitable limits on the conceptual understanding of complex environmental systems, the Guidance should discuss both qualitative and quantitative estimates of uncertainties. The Committee notes that an explicit accounting of uncertainty is critical.
- Validity of the space-for-time substitution assumption can be supported by analysis of long-term stressor-response data for selected data-rich sites. Subsection 4.2 of the Guidance states that all stressor-response models estimated from cross-sectional or synoptic data must also invoke the assumption that spatial differences in sites can be substituted for temporal differences without a substantial degradation of model accuracy (i.e., the space-for-time substitution). As the Guidance states, a good way to provide support for the validity of this assumption is to analyze long-term stressor-response data for selected data-rich sites.

- As previously discussed, the Guidance should contain additional information about the importance of considering “data bias” in interpreting the stressor-response results with regard to predictive performance and uncertainty, and also the importance of uncertainty imposed by model assumptions. Additional guidance is needed on to how to interpret data from a particular environment (e.g., a data set based on lake data) and its appropriateness (or lack thereof) for describing conditions more broadly. It would be helpful to include in the Guidance examples of databases that would be “ideal” or appropriate for each empirical model presented. For example, would the conceptual model for considering nutrient criteria be ideally approached using seasonal data, data from shaded versus unshaded tributaries, data from Wadeable streams versus big rivers, and/or long versus short term averages of data describing the stressor or the response? [See the Responses to Charge Questions 1 and 2 for additional discussion.]

Findings on selection of the stressor-response model

- The Committee notes that Subsection 4.3 of the Guidance should discuss grounding models in reality through use of prior knowledge. A great deal is known about the effects of nutrients on aquatic systems, and the relationships between variables should reflect that knowledge. All models should be evaluated to determine whether they make sense biologically (e.g., is the range of data used appropriate? are the models mechanistically sound?). [See the response to Charge Question 5 for additional discussion.]
- Subsection 4.3 of the Guidance could be improved by providing a more detailed discussion of how to decide when to use each method to model stressor-response relationships, and the advantages/disadvantages associated with each method. Table 1 on page 44 of the Guidance is not sufficient for this purpose. It would be beneficial to provide a case study using a single data set to demonstrate the comparison of a range of model choices.
- The Committee notes that the stated objective of Subsection 4.3 in the Guidance, “demonstrating how to select a stressor-response model using the response variable that best represents the data,” is not the same as the goal of Section 4, “evaluating the predictive accuracy of estimated stressor-response relationships.” Confidence in predictive accuracy should be the primary consideration in model selection. Further, while it may ultimately be necessary to select a single model, one should also understand the significance to criteria derivation of selecting among reasonable alternative models or the effect of model averaging when a single most appropriate model cannot clearly be identified.
- In Subsection 4.3 of the Guidance, more detail should be provided in the discussion of conditions under which the last two methods, non-parametric changepoint analysis (nCPA) and discontinuous regression, should be applied (other than simply stating that they should be used when a direct designated use impairment threshold is unavailable). In addition, the Committee notes that a curved response: 1) may or may not be real; 2) may or may not signal an impaired designated use; and 3) may or may not be indicated at all by the data. Further, a curved response may be modeled by one of the linear methods after transformation. [See the response to Charge Question 5 for additional discussion.]

- The Committee notes that linear stressor-response functions may not provide high levels of accuracy for nutrient criteria development. Six different methods are summarized in Table 1 of Subsection 4.3. The first four methods all assume that the stressor-response function can be modeled sufficiently as a linear model or a generalized linear model. It is unlikely that linear stressor-response functions can ever achieve high levels of accuracy across the many different confounding variables and the many different physical, chemical and biological characteristics of specific sites.

Key recommendations concerning evaluating the predictive accuracy of estimated stressor-response relationships

As a consequence of the findings presented above, the Committee provides the following key recommendations.

1. The Guidance should be revised to provide a clear framework for statistical model selection. This framework should include a set of decision tools and criteria used not only to determine which model fits best, but also whether the stressor-response approach to criteria development is appropriate.
2. The Guidance should be revised to provide much more detailed model validation guidance.
3. Subsection 4.1 of the Guidance (Model validation) should be revised to:
 - Make it consistent with other EPA guidance (U.S. EPA, 2009a) on development, evaluation, and application of models.
 - Provide more detailed information on the use of randomly or non-randomly selected data sets to help address questions about how much data should be held out of the original analysis to adequately support the validation process.
 - Elaborate upon assumptions and uncertainties in “best fit” determinations, and in particular provide additional information to assess the closeness of root-mean-square predictive error (RMSPE).
 - State that nutrient criteria should result from a weight-of-evidence approach based on the application of multiple empirical approaches considering multiple response variables as appropriate.
4. Subsection 4.2 of the Guidance should be revised to provide an expanded discussion of uncertainty. This section should address both qualitative and quantitative estimates of uncertainty as well as data bias.
5. Subsection 4.3 of the Guidance should be revised to:
 - Address grounding models in reality through use of prior knowledge.

- Provide a more detailed discussion on how to decide when to use each method for modeling stressor-response relationships, and the advantages/disadvantages associated with each method.
- Provide more detail regarding the conditions under which the last two methods, non-parametric changepoint analysis (nCPA) and discontinuous regression, should be applied.
- Address inaccuracies associated with linear stressor-response functions.

3.7. Charge Question 7. Evaluating candidate stressor-response criteria

Section 5 of the draft guidance document describes how to evaluate the candidate stressor-response criteria. An approach is outlined for predicting conditions that might result after implementing different nutrient criteria. Please comment on uncertainties that would remain if water quality criteria for nutrients were based solely on estimated stressor-response relationships and in what ways other information/analysis would help address and possibly reduce this uncertainty.

Section 5 of the Guidance is an important part of the document because selection of criteria has environmental, social, and economic consequences. We provide the following comments and findings in response to Charge Question 7.

Findings on recognizing uncertainty

- As previously discussed, the Guidance does not address or partition inherent critical uncertainties in the stressor-response approach. The Guidance describes approaches that use a data-mining exercise to demonstrate a possible cause-effect relationship for the nutrient-ecosystem response. However, the document does not address or partition inherent critical uncertainties in the stressor-response approach which, as demonstrated in examples in the Guidance and in public presentations given to the Committee, can be extremely large (e.g., several orders of magnitude). Because of the demonstrated uncertainties, prediction from an empirical stressor-response model for a specific system of interest cannot always be interpreted as an accurate prediction of future conditions. [See the responses to Charge Questions 1 and 5 for additional discussion.]
- Uncertainty also results from climatic or other environmental conditions under which studies were conducted. In addition to uncertainties documented in the Guidance and in the public presentations to the Committee, uncertainty also results from the climatic or other environmental conditions under which empirical studies were conducted and response models developed. Studies conducted over relatively limited conditions (e.g., wet or dry years) or short-term periods (e.g., base flows, summer) are unlikely to provide the robust response relationships required for criteria development.

Findings on reducing uncertainty

- A major uncertainty inherent in the Guidance is accounting for factors that influence biological responses to nutrient inputs. For criteria that meet EPA's stated goal of "protecting against environmental degradation by nutrients," the underlying causal models must be correct. Habitat condition is a crucial consideration in this regard (e.g., light [for example, canopy cover], hydrology, grazer abundance, velocity, sediment type) that is not adequately addressed in the Guidance. Thus, a major uncertainty inherent in the Guidance is accounting for factors that influence biological responses to nutrient inputs. Addressing this uncertainty requires adequately accounting for these factors in different types of waterbodies. [See the responses to Charge Questions 1, 2, 3, and 5 for additional discussion.]
- Uncertainty in the water quality criteria for nutrients could be reduced by obtaining data from well-designed site-specific monitoring programs. If "water quality criteria for nutrients were based solely on estimated stressor-response relationships," a critical overall uncertainty would be understanding where, within the range of probabilities, a single waterbody to which the criteria are applied will fall. This, in effect, is uncertainty in the space-for-time assumption discussed in the Guidance. That is, if the criterion nutrient concentration developed using an approach involving data from multiple locations is exceeded, will the predicted response and designated use impairment occur at a single location of interest? This type of uncertainty can be reduced by obtaining data from well-designed site-specific monitoring programs. Such monitoring would focus on obtaining specific information on the variability in stressor and response variables and important covariates with a goal of better defining the interactions of multiple variables and attributes affecting the designated uses of a waterbody. Measurement of actual biological responses would be appropriate, emphasizing variables that respond most directly to changes in nutrient concentrations. These are typically measures of primary productivity or primary producers, or water chemistry changes such as DO and pH. Where necessary, such data may be used to develop computer simulation models specific to the system of interest that can facilitate forecasting of stressors and associated responses.
- Numeric nutrient criteria developed and implemented without consideration of system specific conditions (e.g., from a classification based on site types) can lead to management actions that may have negative social and economic and unintended environmental consequences without additional environmental protection. The Committee emphasizes the importance of not only recognizing but also making allowance in the Guidance for conditions specific to the system of interest so that the resulting science allows the best management decisions to be made. In this regard, as previously discussed, we recommend use of a tiered weight-of-evidence approach to criteria development. Weight-of-evidence is typically used to determine the tier at which uncertainty has been reduced sufficiently for informed management decision making. [See the responses to Charge Questions 1, 2, 3, and 5 for additional discussion.]
- The Guidance can be used to develop numeric nutrient criteria in a tiered, weight-of-evidence assessment using appropriately modified EPA approved procedures together with other approaches that address causation. Large uncertainties in the stressor-response relationship

and the fact that causation is neither directly addressed nor documented indicate that the stressor-response approach using empirical data cannot be used in isolation to develop technically defensible water quality criteria that will “protect against environmental degradation by nutrients.” The Guidance can, however, be used in a tiered, weight-of-evidence assessment (using appropriately modified U.S. EPA-approved procedures, e.g., EPA’s Causal Analysis/Diagnosis Decision Information System [CADDIS]), (U.S. EPA, 2009b). [See the responses to Charge Questions 1, 3, 5, and 6 for additional discussion.]

- EPA should consider addressing the use of probabilistic modeling (using the distribution of data in the model and re-sampling or simulating a new distribution) to better determine significant stressor-response relationships. For instance, a statistically significant stressor-response relationship can be derived that may represent only a small portion of the variability in the data. Relying solely on this relationship would result in a tremendous amount of uncertainty in the final criterion developed. A good example of this is Figure 14 (p. 25) of the Guidance, which shows a statistically significant model that explains only 5% of the variation in the data - meaning that 95% of the variation is not explained by the model. Guidance on model selection is critical to reducing uncertainty. The selection of target numeric criteria as outlined in the Guidance is enhanced by the attempt to predict post-implementation conditions. However, the example used in Figures 29 and 30 of the Guidance is confusing as it appears that the values are re-projected using one criterion value (log TP=2) and the prediction analysis is made (i.e., that all 8 of the sites would still exceed the criterion) using a different value (log TP=1.6).

Findings on criteria application and monitoring for assessment

- The approach presented in Section 5 of the Guidance should be revisited and possibly replaced. It appears to be highly sensitive to the way that individual data points located above a response threshold are distributed around the regression line. For example, in Figures 30 and 31 of the Guidance, near the intersection of TP and chlorophyll a targets and candidate criteria, more than half of the data points fall above the regression line which reflects the best fit to all the data. Projecting back to lower TP concentrations for each of these individual data points would force a lower TP criterion than would be the case if the data were actually normally distributed around the regression line. In other cases, there may be a “cluster” of data points below the regression line, and the back-projected TP criterion would be higher than if all data points were distributed randomly about the regression line.
- The Guidance does not adequately address the important issue of continued monitoring and assessment for adaptive management. With regard to application of numeric nutrient criteria, Section 5 of the Guidance discusses comparison of predicted and observed data to evaluate response(s), along the lines of adaptive targets. This intrinsically implies that continued monitoring and assessment of concentration versus biological response is taking place. While this is a good idea in principle, it is not clear from the Guidance that this is to be done, how it is to be done, or at what scale it should be done. This is important because it relates to the issue of measuring changes in indicators of biological response as nutrient inputs are reduced to waterbodies. It is unclear how hereditary or legacy losses or inputs of N and P to waterbodies will be considered and accounted for in such an empirical approach. This begs

the next set of questions facing water resource managers who establish targets for nutrient loss reduction: “if no water quality improvement or indicator biological response is seen, are the targets/criteria too high or are legacy nutrient inputs increasingly significant contributors?” and “how long does it take dynamic ecosystems and watersheds to respond to changing nutrient inputs?”

- The Guidance should address a number of questions to clarify how the evaluation of candidate stressor-response criteria will occur, presumably through monitoring. These questions include the following:
 - While a sound monitoring program will be essential, what form will this take?
 - At what level in time and space will monitoring be established to evaluate criteria?
 - Where, when, and how will samples be collected to establish a long-term monitoring program to clearly define and measure candidate response(s) to any changes in management and stressor inputs, as predicted by nutrient criteria?
 - How will monitoring be conducted to give a whole watershed assessment, considering all nutrient sources and stressors that are contributing spatially and temporally?
 - How will continued legacy stressor inputs (N and P) be distinguished from management change-related decreases? Internal recycling of nutrients can mask water quality improvements brought about by nutrient loss reductions resulting from land management changes.
- The direct and indirect effects of best management practices should be captured in setting numeric nutrient targets and evaluating responses to target reductions. Implementation of practices to decrease nutrient losses or inputs to surface waters (i.e., best or beneficial management practices [BMPs]) can influence other factors that will affect biological response to nutrient loadings. For instance, riparian buffers are effective at removing sediment and sediment-bound nutrients (particularly P), as well as removing N by uptake and denitrification. However, they also provide shade and will influence stream water temperature and thereby the stressor-response relationship. Such interactions should be addressed in nutrient criteria development. In addition, the use of buffers, for example, will influence the size of particulates or sediment in a stream or river that may affect the benthic population dynamics or species diversity. These direct and indirect effects and complexities should be captured in target setting and the evaluation of response to achieving target reductions.

Key Recommendations in response to Charge Question 7

The Committee provides the following key recommendations to address the comments and findings above.

Key Recommendations with regard to recognizing uncertainty

1. The Guidance needs to clearly indicate that the empirical stressor-response approach does not result in cause-effect relationships; it only indicates correlations that need to be explored further. For example, the words “cause-effect” should be removed from the title of Step two.
2. The Guidance should address partitioning the uncertainty among the various factors that are involved in the stressor-response relationship for the specific region/system of interest. Some variables may be irrelevant to the hypothesized model for that system.
3. The Guidance should better document the physical, chemical and biological variables comprising the relationships (e.g., habitat, spatial, and temporal) that define the aquatic system, and which may be important in modifying the relationship between nutrient concentrations and observed endpoints. These factors need to be well documented so that the uncertainty in the relationship between nutrient concentrations and measured endpoints can be reduced.

Key recommendations with regard to conceptual models and uncertainty description/analysis

4. The Guidance should caution users about potential problems associated with using the overall regression to predict conditions that might result after implementing different nutrient criteria.
5. EPA should consider addressing the use of probabilistic modeling to better determine significant stressor-response relationships.
6. The Guidance should address uncertainty resulting from climatic or other environmental conditions under which studies were conducted.
7. EPA should discourage use of “biased” databases (i.e., that do not contain the range of data necessary to fully characterize a system of interest) to develop stressor-response relationships.
8. When cross-sectional data are used to develop empirical models, the ranges of values for stressors and responses in the cross-sectional data should fully encompass not only the current conditions in systems of interest, but also the predicted values for the stressors and responses corresponding to removal of the designated use impairment.
9. The Committee recommends predicting conditions that might result after implementing different nutrient criteria and testing these conditions on specific data-rich systems of interest.
10. The Committee recommends that EPA frame uncertainty according to the following key issues:

- What are the goals of the decision makers (e.g., what are the designated uses and when are they impaired?), and what amount of certainty is required to make that decision?
- Are the mechanisms of the cause-effect relationship understood and are they reflected in the types of measurements recommended?
- Do the variables measured reflect the goals of the Clean Water Act? In the examples presented in Section 5 of the Guidance species richness or chlorophyll a are not clearly linked to the stated goals (fishable, swimmable waters, etc).
- Does the analysis tool reflect a known cause-effect relationship and does it allow an understanding of the process?
- What are the *a priori* criteria to be met by the data? This must be established to make it possible to tell when the data cannot support the decision making process.

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Subject: Periphyton Standing Crop and Diatom Assemblages in the Wissahickon Watershed
Wissahickon Watershed
Montgomery and Philadelphia Counties
Stream Code: Wissahickon Creek (00844)
Sandy Run (00859)
Prophecy Creek (00875)
Trewellyn Creek (00886)

To: Stream File

From: Alan C. Everett
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Through: Michael Boyer
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Abstract

RELATIONSHIP BETWEEN PHYSICOCHEMICAL CONDITIONS AND PERIPHYTON (STANDING CROP AND DIATOM ASSEMBLAGES) IN A NORTHERN PIEDMONT CREEK IMPACTED BY MUNICIPAL SEWAGE TREATMENT PLANT DISCHARGES AND STORM WATER. A.C.

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Periphyton standing crop and diatom assemblages were used to assess the effect of nutrients from municipal discharges and storm water on Wissahickon Creek. Wissahickon Creek is tributary to the Schuylkill River and drains 167 km² of Montgomery and Philadelphia Counties in Southeastern Pennsylvania. Physicochemical and benthic algal sampling was performed at 7 main stem stations and 3 tributary stations during base flow conditions in August and September 1998. Total reactive phosphorus and inorganic nitrogen concentrations at stations influenced by municipal dischargers were respectively 13 to 51 times and 3 to 12 times greater than suggested mesotrophic-eutrophic boundary concentrations. Large diel dissolved oxygen swings and low minimum DO concentrations associated with excessive algal growth were documented at two stations. Periphyton chlorophyll-a concentrations ranged from 48 mg/m² to 276 mg/m² and were negatively related to percent canopy cover. Standing crop at open canopy stations was higher than at closed canopy stations and positively related to inorganic N concentration. Diatom assemblages were indicative of eutrophic conditions, with Kelly's Trophic Diatom Index ranging from 76% to 92%. Our study demonstrates the importance of riparian vegetation in limiting algal biomass in nutrient enriched streams and documents the need for nutrient reductions in the Wissahickon Watershed.

Introduction

Benthic algal communities are significant primary producers in wadable streams and can be utilized as indicators of environmental conditions (Barbour et al. 1999). Periphyton standing crop and community composition are influenced by nutrient levels, light, hydrologic condition, temperature, substrate type and herbivore grazing (Stevenson 1996). Accrual of benthic algal standing crop depends primarily on the level of two resources: nutrients and light (Biggs, 1996). Eutrophication may cause different algal taxa to become more competitive and taxa composition can shift (Dodds and Welch 2000). Generally, filamentous chlorophytes become abundant, sometimes creating nuisance conditions, when high nitrogen and phosphorous levels and adequate sunlight are provided. Studies have shown that phosphorus concentrations of only 25 to 50 ug/l orthophosphate are needed to maintain maximum benthic algal biomass in streams (Borchardt 1996). In small streams, riparian leaf canopies can intercept 95% of incident solar radiation. Benthic algal standing crops, as chlorophyll-a, can be 4 to 5 times higher at open canopy sites than at closed canopy sites (Hill 1996). Nuisance levels of algae and periphyton community shifts associated with high nutrients may cause water quality impairment (e.g. low dissolved oxygen), negative impacts to macroinvertebrates and fish, or aesthetic impairments for water users (Dodds and Welch 2000). Pennsylvania does not have nutrient or biological response (e.g. algal biomass) criteria incorporated into water quality standards (Chapter 93). Large diel variation and associated low dissolved oxygen concentrations are currently used as indicators of nuisance algae conditions. Recent research, examining nutrient levels and biological responses, could provide the basis for future criteria.

Dodds (1998) examined a worldwide temperate stream database and developed a suggested classification of stream trophic state based upon frequency distributions of total nitrogen (TN), total phosphorus (TP) and Chlorophyll a. The oligotrophic-mesotrophic boundary was 700 ug/l for TN, 25 ug/l for TP, 20 mg/m² for benthic Chl-a, and 60 mg/m² for maximum benthic Chl-a. The mesotrophic-eutrophic boundary was suggested to be 1500 ug/l for TN, 75 ug/l for TP, 70 mg/m² for mean benthic Chl-a, and 200 mg/m² for maximum benthic Chl-a. EPA's (2000) nutrient guidance criteria for Nutrient Ecoregion IX, which includes Wissahickon Creek, is similar to Dodds' oligotrophic-mesotrophic boundary: TN = 692 ug/l, TP = 37 ug/l, and Chl-a = 20mg/m². Other work has estimated that levels of nuisance algae are reached when Chl-a concentrations reach a threshold of 100 to 150 mg/m² (Welch et al. 1989) or macroalgae coverage exceeds 40 % (Biggs, 1996). Diatom assemblages have also been used to determine the trophic status of streams (Kelly 1996). These studies lack a region-specific perspective, but provide suitable references for comparison with nutrients and biological responses in the Wissahickon Watershed.

The purpose of this survey was to examine algal standing crop and community composition within the Wissahickon Watershed, determine relationships between physicochemical conditions and benthic algae, and compare results with literature reported chemical and biological values that indicate eutrophication. Semi-quantitative rapid periphyton (macroalgae) survey methods were compared with quantitative standing crop measurements as part of the survey.

The Wissahickon Creek is tributary to the Schuylkill River and drains 64 square miles of Montgomery and Philadelphia Counties in Southeastern Pennsylvania. Residential and commercial/industrial land uses dominate the watershed. Boyer (1997) provides a good geologic description of the basin. The Wissahickon Creek Basin is located in the Northern Piedmont Ecoregion (64). Three subecoregions are represented in the watershed: Triassic Lowlands (64a), Piedmont Lowlands (64d), and Piedmont Uplands (64c). The upper watershed from the headwaters to Fort Washington State Park is contained in the Triassic Lowlands Subecoregion

and has shale, siltstone and sandstone parent materials. A two mile wide valley (Chester Valley) running southwest to northeast encompasses part of the Wissahickon Creek near Fort Washington State Park, most of the Sandy Run Basin, and some small UNTs to Wissahickon Creek. Chester Valley is located in the Piedmont Lowlands and has limestone parent materials. The lower Wissahickon Basin is located in the Piedmont Uplands Subcoregion and contains gneiss and schist parent material.

Summaries of the Department's Wissahickon Creek surveys prior to 1996 have been provided elsewhere and will not be reviewed here (Boyer 1997). Schubert (1996) investigated the nutrient status of Wissahickon Creek utilizing chemical sampling and the *Selenastrum capricornutum* Printz Algal Assay Bottle Test. Schubert concluded the following: 1) the Wissahickon Watershed was nutrient enriched, 2) water collected at all stations (4 main stem) exhibited high algal growth potentials, and 3) *Selenastrum capricornutum* biomass increased with increasing trace element concentrations but did not increase with increasing nitrogen and phosphorus concentrations, indicating trace element limitation and nonlimiting concentrations of nitrogen and phosphorus in the Wissahickon Creek water samples.

Boyer (1997) listed 26 NPDES permitted facilities which discharge treated effluent into the Wissahickon Creek Basin. Treated effluent represented 33.7% of average stream flow and 249% of the 7 day average low flow which occurs every 10 years (Q7,10) of the Wissahickon Creek at Bells Mill Road Bridge (Boyer 1997). Boyer's (1997) 13 station survey of the watershed examined base flow water chemistry, habitat, macroinvertebrates, and fish and concluded that the Wissahickon Creek is nutrient enriched and all stations were biologically impaired based upon EPA's Rapid Bioassessment Protocol for macroinvertebrates.

Everett (internal DEP data, UW Program) conducted a survey in 1997 examining macroinvertebrates and habitat utilizing Pa. DEP's Unassessed Waters Screening Protocol. Twelve tributary stations and 6 main stem stations were included in the survey. All stations except the Prophecy Creek station were biologically impaired. Benthic macroinvertebrate communities at impaired stations had low numbers of taxa, low numbers of pollution sensitive EPT taxa, and were dominated by the caddis fly family Hydropsychidae. Prophecy Creek's macroinvertebrate community was found to be unimpaired, having 16 total families, 4 pollution sensitive EPT families, and Philopotamidae as the dominant family. Everett (internal DEP data, UW Program) conducted a point source follow-up survey in 1998 which examined water chemistry and macroinvertebrate communities upstream and downstream from five municipal sewage treatment plants (Upper Gwynedd STP, North Wales STP, Ambler STP, Abington STP and Upper Dublin STP) and at the mouth of Wissahickon Creek. These five municipal dischargers account for approximately 92% of treated effluent discharging to the basin (Boyer 1997). All stations had impaired macroinvertebrate communities relative to the Muddy Creek ambient reference station. Base flow nutrient concentrations downstream from point sources indicated enriched conditions with the five municipal dischargers accounting for a majority of phosphorous and nitrogen loadings. The five municipal STPs accounted for 34% of the total flow at the mouth on July 7, 1998. Conclusions of the Unassessed Waters Screening and Point Source Survey were that storm water (flow variability, in stream sediment, nutrients) and municipal point sources (nutrients) were the primary sources of impairment in the basin. The Wissahickon Basin was placed on Pennsylvania's 303d list in 1998.

Wissahickon Creek and its tributaries are classified Trout Stocked Fishery (TSF) under the Department's Chapter 93 Water Quality Standards. TSF designation provides for the maintenance of stocked trout from February 15th to July 31st, and the maintenance and propagation of fish species and additional flora and fauna that are indigenous to a warm water habitat.

Wissahickon Creek periphyton was surveyed by Water Pollution Biologists Mike Boyer, Steve Schubert and Allen Whitehead, Watershed Coordinator Nancy Crickman, and the writer on September 10, 11, 14, and 15 1998. Gary Jones, section leader for DEP laboratory biological services, and staff performed analyses for Chl-a, phaeophytin, and AFDM. Natalie West, a NSF REU student intern in Dr. Don Charles' Phycology Lab at the Academy of Natural Sciences of Philadelphia (ANSP), performed diatom identification and enumeration on qualitative rock samples.

The National Institute for Environmental Renewal (NIEER) requested that Pa DEP conduct the survey in conjunction with NIEER's base flow water quality sampling within the watershed (NIEER, 1999). NIEER had funding to develop an action plan for the basin, model pollutant loads, and organize the Wissahickon Partnership, a consortium of private and public stakeholders in the watershed.

Methods

Periphyton measurements were made at 7 stations on Wissahickon Creek, and one station on each of three tributary streams: Prophecy Creek, Trewellyn Creek, and Sandy Run (Fig. 1). Conditions within the watershed were well represented and included main stem stations and a Sandy Run station influenced by storm water and municipal point sources, a station influenced by storm water (Trewellyn Creek) and a station representing the best biological condition in the watershed (Prophecy Creek) based upon the Unassessed Waters Screening. Stations were not located upstream of point sources on the Wissahickon and Sandy Run because lack of base flow precluded sampling in riffle areas. All stations corresponded to NIEER water quality stations allowing for comparison of chemical and biological data at each station (Table 1). NIEER water quality sampling was conducted within a 3-week time interval prior to the mid September periphyton sampling. Results of NIEER's water quality sampling are given in Appendix I. Total phosphorus results were not included in the data set because of suspected contamination. All periphyton stations except P-MR (Prophecy Creek) and T-GH (Trewellyn Creek) had corresponding dissolved oxygen diel surveys that were conducted by NIEER between 7/30/98 and 9/29/98. Diel dissolved oxygen data was collected at 15 minute intervals using YSI multiparameter data sondes which also recorded temperature, specific conductance, pH and turbidity. For the purposes of this report, data immediately following the 8/17/98 storm event were excluded because of the potential effect of scour on benthic algae standing crop.

Methods described below are modifications of those described in Rapid Bioassessment Protocols for Use in Wadeable Streams and Rivers (Barbour 1999). Riffle areas in close proximity to NIEER water quality sampling stations were chosen for physical and biological sampling.

Physical Sampling

Length of riffle reach and percent substrate type were estimated visually. One transect, perpendicular to the stream, was randomly selected in the upper, middle, and lower 1/3 of the reach for a total of three transects. Wetted stream width at base flow was measured for each transect and averaged for a station stream width. Water depth ranges were estimated for the riffles. Canopy coverage was measured at mid-channel / mid-reach using a Model C Spherical Densiometer. Presence of tree or shrub canopy was calculated for 96 equi-spaced dots on the gridded concave mirror. Readings taken for North, East, South, and West were averaged and a percent cover was calculated for the station.

Biological Sampling

Periphyton Standing Crop

Periphyton sampling was performed over a six-day period (9/10 to 9/16/98) under stable base flow conditions. Boulder, cobble, or large gravel substrates were randomly sampled from the left, center, and right 1/3 of the channel along each transect and composited prior to analysis. Periphyton was collected by pressing a 2-inch diameter (20.3 cm²) PVC pipe section, fitted with a foam gasket (collar), against the substrate. With the PVC pipe section firmly pressed against the rock's surface, the rock was removed from the stream and attached algae was removed with a modified hard bristle toothbrush. The algal slurry was transferred to a plastic container with a cooking baster or wide-bore pipette. Samples were sieved (800um X 900 um mesh) to remove moss from the sample. Moss was gently brushed and shaken to remove entangled or epiphytic algae. Filamentous algae collected on the sieve was segmented with a razor blade on a glazed tile and rinsed back into the sample. A total sample volume was recorded for each transect.

Well-mixed subsamples were taken for Chlorophyll-a and Phaeophytin-a analysis. Ash Free Dry Mass (AFDM) analysis and algal identification and enumeration. Chl-a and AFDM samples were field filtered onto glass fiber filters (Gelman A/E, 1um). Filter volumes ranged from 20 to 50 mls depending on concentration of algal material. MgCO₃ slurry (1gm/100ml) was added to the filtered Chl-a sample for buffering and stabilization. Samples were stored on dry ice in the field (-20°C), in a conventional freezer at the DEP field office, shipped to Harrisburg (DEP Laboratory) on dry ice and stored in deep freeze (-30°C) prior to analysis. Samples were analyzed on 11/17, 11/23, 12/1 and 12/2/98.

Analysis and calculation of Chl-a (mg/l) and phaeophytin (mg/l) at DEP's Bureau of Laboratories followed spectrophotometric methods (Method 10200) described in Standard Methods for the Examination of Water and Wastewater (19th edition, 1995). Chl-a and phaeophytin concentrations per unit substrate surface area (mg/m²) were calculated by multiplying the laboratory determined concentration (mg/l) by the total sample volume (l) and dividing by the total surface area (0.00608 m²).

AFDM filters were analyzed gravimetrically by drying to a constant weight at 105 °C and igniting for one hour at 500 °C. This method is a modification of Method 10300c in Standard Methods for the Examination of Water and Wastewater (1995). Five filter blanks were analyzed and the average AFDM associated with filter blanks were subtracted from the AFDM samples. AFDM per unit substrate area (mg/cm²) was calculated by multiplying AFDM sub sample concentration (mg/l) by total sample volume (l) and dividing by surface area (cm²). Duplicate analyses for Chl-a, phaeophytin and AFDM were collected for two stations. The autotrophic index was calculated for each station as AFDM (mg/m²) per Chlorophyll a (mg/m²).

A 15 to 20 ml subsample was transferred to a scintillation vial and preserved with glutaraldehyde (2% diluted concentration) for algal identification and enumeration. These samples remain archived at DEP's Southeast Regional Office.

Diatom Flora

Rock, gravel, woody debris and sand/silt microhabitats were sampled separately at three random locations within the riffle at each station. Collections for each microhabitat were composited and a well-mixed 15ml sub sample was transferred to a 20 ml scintillation vial and preserved with glutaraldehyde. Sampling was conducted with a modified hard bristle toothbrush and a wide-bore pipette.

Rock samples were identified to species and enumerated at ANSP (West 2000). Gravel, woody debris and sand/silt microhabitat samples were not examined because of resource constraints and remain at ANSP.

The diatom assemblage was described using five metrics: number of taxa, Trophic Diatom Index (TDI) (Kelly 1996), Shannon-Wiener Diversity Index, % Dominants and Siltation Index. The TDI is based upon species or genera specific pollution (nutrient) sensitivity ratings. Taxa are rated from 1, indicating taxa favored by very low nutrient concentrations, to 5, indicating taxa favored by very high nutrient concentrations. Taxa are also weighted from 0 to 3 according to their value as indicators. For example, predominately planktonic diatoms, which have settled in the benthos, would be given a value of 0. A weighted mean sensitivity of taxa present at a station is calculated and expressed as a percentage on a scale from 0 to 100. A eutrophic-mesotrophic boundary TDI of 67% was assigned by the writer based upon Kelly's sensitivity scale of 1 to 5. Percent dominants is the percentage of total diatom valves that accounted for greater than 10% of overall abundance in the sample and is a measure of community evenness. Siltation index represents the percentage of motile taxa. Motile taxa are better able to maintain substrate surface position in high siltation environments than nonmotile taxa.

Rapid Periphyton Survey

Semi-quantitative visual assessments were performed which estimated the maximum length (mm) and percent coverage of macroalgae (typically filamentous green algae). Three random locations along each transect, in the left, center, and right 1/3 of the channel, were examined using a viewing bucket with 49 equi-spaced dots organized in a 7" X 7" grid. Percent macroalgae coverage was estimated for each location by counting the dots where macroalgae was present. Maximum macroalgae length found within the grid was measured and recorded. Average percent coverage and average maximum length for each transect was considered one sample. Transect results for each station were then averaged for the mean station score. These quick objective visual methods were performed to see if they were correlated to standing crop and if they had potential as a screening protocol for other Department work. The rapid periphyton survey described in EPA's RBP Manual also discusses characterization of the microalgae. Microalgae assessments were not included in this survey because of difficulty in characterizing community type and thickness.

Aquatic Macrophyte Survey

The riffle reach and abutting upstream and downstream pools were surveyed for aquatic macrophytes. If present the relative abundance of the macrophyte was recorded based on a scale of one (rare) to 4 (abundant). Moss was found to be a significant component of biomass at some sites and samples collected in the standing crop transect sampling were collected in foil pouches and analyzed for AFDM according to methods described above for algal samples.

Statistical Analysis

All statistical analyses were performed using Microsoft Excel (Microsoft Office 2000) data analysis tools, except Principal Component Analysis (PCA). Descriptive statistics (mean, standard deviation, coefficient of variation, and variance) were calculated for Chl-a, phaeophytin, AFDM, % macroalgae coverage and maximum algae length. One way analysis of variance, with significance set at $p < 0.05$, was calculated for all biological variables at all stations except % macroalgae coverage at S-TR. Macroalgae coverage at S-TR included moss and therefore was not included in the ANOVA matrix. All data met the assumption of homogeneity of variance using the Fmax-test except AFDM and the autotrophic index. AFDM

and autotrophic index data were log(base10) transformed to meet the assumptions of ANOVA. Pearson Product Moment Correlation analyses were performed on selected biological, chemical and physical variables for all stations. Correlation analyses were also used to examine interdependence of standing crop and field macroalgae results. PCA was used to graphically show physicochemical and biological relationships between stations. PCA analysis was performed using Statistica at the Philadelphia Water Department.

Results

Physical Assessment

Stream width ranged from 2.5 meters for Prophecy Creek station P-MR to a maximum width of 16.8 meters for Wissahickon Creek station W-RA (Appendix 1). Four 2nd order, three 3rd order, and three 4th order reaches were included in the survey. Percentage of boulder/cobble substrate in the sampled riffles ranged from 35% to 80% and provided adequate benthic algae sampling substrate. Percent canopy coverage ranged from a low of 1% (S-TR) at the Lu Lu Country Club along Sandy Run to a high of 58% (P-MR) on a forested reach of Prophecy Creek downstream from Morris Road.

Nutrients

Nutrient concentrations indicate enriched conditions at all Wissahickon Creek stations and at the Sandy Run station (S-TR). Total reactive phosphorus (TRP) ranged from 50 ug/l at T-GH to 3,800 ug/l at station S-TR (Fig.2). TRP concentrations at Wissahickon Creek stations and Sandy Run station S-TR were 13 to 51 times greater than Dodd's suggested mesotrophic-eutrophic boundary concentration for total phosphorous (TP = 75 ug/l). TRP does not include condensed phosphates and organically based phosphates that are included in TP analysis. Therefore, TP concentrations could be expected to be somewhat higher depending on concentrations of water column solids. The highest concentrations were found at stations located directly below municipal sewage treatment plants (S-TR, W-NW, W-PR, and W-GA). Phosphorus uptake, increased flow from tributary streams having lower P concentrations (e.g. Lorraine Run quarry discharge), and adsorption/sedimentation are probably responsible for lower levels found in Fairmount Park (W-BM, W-RA).

TRP concentrations in Prophecy Creek (P-MR) and Trewellyn Creek (T-GH), the only stations without point source contributions, were below Dodd's suggested mesotrophic-eutrophic TP boundary concentration, but above EPA suggested nutrient criteria for Nutrient Ecoregion IX (TP = 37 ug/l) (EPA 822-B-00-019). Tinicum Creek, an ambient reference stream located in the Triassic Lowlands Subecoregion, and Cooks Creek, an ambient reference stream located in the Piedmont Lowlands Ecoregion, were sampled as part of Pa DEP's Water Quality Network (WQN) within the same 3 week period as NIER's water quality sampling (8/31/98). TP concentrations for Tinicum Creek and Cooks Creek were 10ug/l and 15 ug/l respectively, indicating that phosphorus is naturally low in streams having similar geology to the Upper Wissahickon and Sandy Run basins.

Inorganic nitrogen ranged from 222 ug/l (T-GH) to 17,478 ug/l (S-TR) (Fig.3). Wissahickon Creek and Sandy Run stations had inorganic nitrogen concentrations 2.6 to 11.7 times greater than Dodd's suggested mesotrophic-eutrophic boundary concentrations for Total Nitrogen (TN) (1500ug/l). Inorganic nitrogen values in the present study underestimate TN because organic nitrogen was not analyzed. Nitrate accounted for $\geq 97\%$ of inorganic nitrogen except for stations P-MR (94%) and T-GH (71%). Nitrate concentrations exceeded Chapter 93 Water Quality Standards for public water supply at stations S-TR, W-PR, W-GA, and W-73.

Similarly to phosphorus, the highest nitrogen concentrations were found at stations located below municipal sewage treatment plants (S-TR, W-PR, W-GA). Nitrogen uptake, denitrification and tributary dilution flows probably account for lower concentrations found in Fairmount Park (W-BM, W-RA). Inorganic nitrogen concentrations in Prophecy Creek (P-MR) and Trewellyn Creek (T-GH) were below Dodd's suggested mesotrophic-eutrophic boundary (1500 ug/l) and below EPA developed nutrient criteria guidelines for Nutrient Ecoregion IX (692 ug/l). Total nitrogen concentrations in Tinicum Creek and Cooks Creek were 230 ug/l and 1,720 ug/l respectively, suggesting naturally low nitrogen in the Triassic Lowland Ecoregion, but higher nitrogen in the Piedmont Lowlands (limestone geology).

Diel Dissolved Oxygen Sampling

NIER's diel dissolved oxygen (DO) data is summarized in Table 2. Average DO concentrations ranged from 4.16 mg/l at station W-NW to 8.78 mg/l at station W-RA. Minimum DO concentrations ranged from 1.34 mg/l (W-NW) to 7.11(W-RA). Wissahickon Creek at North Wales Rd. Bridge had average DO and minimum DO violations of Chapter 93 Water Quality Standards (Avg. = 5.0mg/l, Min. = 4.0 mg/l). Sandy Run at Twining Rd Bridge had minimum DO violations. Average diel swings were calculated by subtracting daily minimum DO from daily maximum DO and averaging diel swings for all days included in the sample. Physical parameters such as bed slope, flow, and temperature, or chemical parameters (BOD) can all influence dissolved oxygen in streams but diel productivity/respiration cycles associated with algal biomass are primarily responsible for dissolved oxygen swings. Diel DO swings were extremely high at stations S-TR (5.6 mg/l) and W-NW (5.9 mg/l), indicating that DO violations are the result of high algal biomass. Diel swings also appear high at stations W-PR and W-WA but water quality criteria violations were not found. Percent DO saturation ranged from 49% at station W-NW to 97% at station W-RA.

Other Chemical Parameters

Biological Oxygen Demand (BOD₅) was elevated at stations W-NW, W-PR, W-GA and W-73, indicating organic pollution associated with municipal sewage treatment plants. Fecal coliform concentrations were elevated above Chapter 93 Water Quality Standards at all stations except W-RA. Copper concentrations at stations W-NW, W-PR, and W-GA were elevated above Chapter 16 Toxics Criteria (estimate for total metals). However, a Water Effects Ratio (WER) was approved for Upper Gwynedd Twp. STP and Ambler STP resulting in site-specific criteria that are higher than concentrations found at corresponding downstream stations (W-PR, W-GA).

Periphyton Standing Crop

Periphyton standing crop as chlorophyll-a (Chl-a) ranged from a low of 48 mg/m² at station W-GA to 276 mg/m² at station W-PR (Fig. 4). Prophecy Creek (P-MR), which exhibited the best macroinvertebrate community in the watershed (1997 Unassessed Waters Survey), had Chl-a concentrations (73 mg/m²) which were significantly lower ($P < 0.05$) than six of the stations with the highest concentrations (Appendix 2). Chl-a concentrations at station W-NW was slightly underestimated because some filamentous algal strands were not disentangled from moss. Nine stations had Chl-a concentrations that exceeded the mesotrophic-eutrophic boundary for mean Chl-a (70 mg/m²) and five stations exceeded the mesotrophic-eutrophic boundary for maximum Chl-a (200 mg/m²) (Dodds et al. 1998). Dodds' mean Chl-a refers to seasonal means for a 2 to 3 month period in a single year. Maxima in some regions may occur in the late fall or early spring when canopy coverage is reduced. Seven of the stations exceeded or were within a

threshold level for nuisance algal conditions suggested by Welch (1988) (100-150 mg Chl-a/ m^2). The upper level of this threshold (150 mg/ m^2) was chosen to represent nuisance conditions in the Wissahickon Creek. Dodds' mesotrophic-eutrophic maximum Chl-a boundary (200 mg/ m^2) would not have included station W-NW, which had dissolved oxygen violations and high percent macroalgae coverage. Dodds' mesotrophic-eutrophic mean Chl-a boundary would have included station P-MR, which represented the best overall biology in the survey. All stations exceeded EPA's recommended guidelines for Chl-a (20 mg/ m^2) for Nutrient Ecoregion IX.

Ash Free Dry Mass (AFDM) ranged from 1.04 mg/ cm^2 at station W-GA to 6.25 mg/ cm^2 at station S-TR (Fig. 5). Large variation between station transects made the AFDM data a less reliable measure of periphyton standing crop than Chl-a concentrations (Appendix 2).

The autotrophic index (AI) ranged from 250 at station W-GA to 103 at station W-PR. Intra-station AFDM variability limited significant differences among stations (Appendix 2). AI values typically range from 50 to 200 (WEF, 1995). Values greater than 200 are indicative of poor water quality where heterotrophic processes dominate the periphyton community. Mean AI values provide evidence of organic pollution at three stations. Station T-GH, a stormwater influenced station had an AI value of 206. Station S-TR, located 0.7 miles downstream from the Abington Township STP, and station W-GA, located 0.4 miles downstream from the Ambler Borough STP had AI values of 241 and 250 respectively. AI values at these stations were not significantly different than station P-MR, which had an AI of 180. Station W-GA had a significantly higher AI than station W-WA. Other data and observations provide further evidence of organic pollution at or near stations S-TR and W-GA: 1) Water column BOD concentrations were elevated at station S-TR (20 day) and station W-GA (5 day and 20 day); 2) Average % DO Saturation was low at station S-TR (75%) and W-GA (81%), and although results are not directly comparable because the diel survey was conducted on different dates, % DO saturation decreased from 94% at station W-WA to 81% at station W-GA; 3) Macroinvertebrate communities in Sandy Run, 0.15 miles downstream from the Abington Township STP were dominated by the black fly *Simulium* (66%) and the organic pollution tolerant red midge *Chironomus* (28%) (Everett, 1998, internal DEP data, UW Program), and 4) Light brown organic solids were noted in depositional areas at station W-GA. These solids were not noted at W-WA and were likely attributable to the Ambler Borough STP discharge. AI values and BOD concentrations were not significantly correlated ($p > 0.05$). Excluding station W-NW, which had a low AI value relative to % DO saturation, AI values and % DO saturations were significantly negatively correlated ($p < 0.05$), suggesting a causal response to heterotrophic benthic biomass. High intra-station AI variance and a high AI value at the biologically unimpaired station P-MR (Everett, 1997, internal DEP data, UW Program) limits the ability to reach strong conclusions relative to the AI. However, based upon AI values, DO saturation, macroinvertebrate data and visual observation, organic enrichment does appear to negatively impact benthic communities at stations W-GA and S-TR.

Duplicate Chl-a and AFDM data showed that field and laboratory methods had good precision. Coefficient of variations for Chl-a and AFDM duplicate data were $< 3\%$ and $< 8\%$ respectively (Appendix 3).

Diatom Flora

Metric scores for diatom assemblages were compared qualitatively (Table 3). Stations P-MR and W-73 had the best diatom assemblage exhibiting: highest number of taxa, highest diversity, best evenness (low % dominant), and a lower percentage of motile species. Treweylln Creek's (T-GH) diatom community was poorest, having the lowest number of taxa, lowest diversity,

lowest evenness, and highest percentage of motile species. Metric scores indicate that stations S-TR and W-NW were also among the poorest stations. TDI values were all high and ranged narrowly from a low of 76% (W-BM) to a high of 92% (W-GA). Based upon the TDI, all sites are considered eutrophic with the diatom flora indicative of high to very high nutrient concentrations.

Rapid Periphyton Survey

Percent macroalgae coverage ranged from 3% at station P-MR to 95% at station W-NW (Fig. 6). Prophecy Creek (P-MR) had percent macroalgae coverage that was significantly lower ($p < 0.05$) than percent coverage at 5 stations (T-GH, W-NW, W-PR, W-WA and W-73). Three stations had excessive coverage of filamentous algae with coverage exceeding 70% of the streambed examined. Station S-TR was not included in statistical analysis because moss was included in the macroalgal coverage estimate. The summed coverage of moss and filamentous algae at station S-TR (57%) is high relative to that found at P-MR or in the Lower Wissahickon (W-BM, W-RA). A macroalgae coverage of greater than 40% has been suggested as a nuisance algae threshold that indicates nutrient or organic enrichment (Biggs 1996).

Average maximum filamentous algae lengths ranged from 2.2 mm at station W-GA to 113.9 mm at station (W-NW). Prophecy Creek (P-MR) had a maximum algal length (11.7 mm) that was significantly lower ($p < 0.05$) than the maximum algal length found at 5 stations (T-GH, S-TR, W-NW, W-PR, and W-73). Four sites, T-GH, S-TR, W-NW and W-PR had excessive lengths with maximum lengths exceeding 50 mm.

Aquatic Macrophyte Survey

Five aquatic macrophyte taxa were found during the survey (Table 4). Moss was found at five stations and was the most commonly encountered macrophyte. Based upon AFDM results, moss at stations S-TR, W-NW, and W-GA may contribute significantly to productivity within the reaches.

Results Summary

Quantitative standing crop results and semi-quantitative macroalgae results were compared utilizing correlation analysis (Appendix 5). Chl-a and AFDM were significantly positively correlated ($p < 0.01$), and percent macroalgae coverage and maximum macroalgae length were significantly positively correlated ($p < 0.01$). Macroalgae coverage and length were positively correlated with Chl-a, but the correlations were not significant ($p > 0.05$). The methods comparison suggests that the macroalgae survey cannot be used as a surrogate for standing crop, but does provide objective measurements that could be used as part of a screening procedure to prioritize more quantitative analysis.

Figure 7 graphically shows station differences based upon principal components analysis of selected physicochemical and biological variables (Appendix 4). Principal component axis 1 (PCA1) had high negative loading coefficients for nutrients, conductivity, and metals and accounted for 34% of the total station variance. Generally, Sandy Run (S-TR) and the main stem stations in the Upper Wissahickon exhibited high nutrients, high conductivity and high metals that are attributable to point source discharges. Lower Wissahickon Watershed stations showed improving water quality condition compared to Sandy Run and the Upper Wissahickon main stem stations. The two tributary streams that are not impacted by treated sewage discharges had the lowest concentration of nutrients and metals. Principal component axis 2 (PCA2) accounted for 21% of the total variance between stations and had high positive loading coefficients for Chl-a and high negative loading coefficients for percent canopy coverage and hardness. PCA2

illustrates the strong negative relationship between periphyton standing crop (Chl-a) and canopy coverage. Stations with low percent canopy coverage (S-TR, W-NW, W-73, and T-GH) had higher Chl-a concentrations, whereas stations with high percent canopy cover (W-GA, W-BM, P-MR) had lower Chl-a concentrations. Percent canopy coverage (independent variable) and Chl-a (dependent variable) are significantly negatively related ($p < 0.005$, $r^2 = 0.71$) (Fig. 8).

The relationship between nutrients (dependent variable) and chlorophyll-a (independent variable) was examined separately for open canopy and closed canopy stations. The separation between open canopy and closed canopy stations was distinct, with the exception of one intermediate station (W-RA). Five stations had % canopy covers less than 25% and four stations had % canopy covers greater than 38%. The intermediate station (32% canopy cover) was included with open canopy sites because of similar Chl-a concentrations ($> 150 \text{ mg/m}^2$). Chl-a concentrations at open canopy sites were positively related to TRP and inorganic N (Figs. 9 and 10). This relationship was significant for inorganic N ($r^2 = 0.66$, $p < 0.05$) but not significant for TRP ($r^2 = 0.41$, $p > 0.05$). Nutrients and Chl-a were not related at closed canopy stations.

Average diel DO swings were greatest at sites having less canopy coverage located in the headwaters of Sandy Run and Wissahickon Creek, and accordingly were significantly negatively correlated ($p < 0.05$) with % canopy coverage and stream width (Appendix 6). The positive correlation of TRP with Inorganic N ($p < 0.01$) and BOD_{20} ($p < 0.05$) was expected because water quality is effluent dominated throughout much of the main stem Wissahickon and Sandy Run.

Discussion

Wissahickon Creek and Sandy Run are influenced by point source discharges from sewage treatment plants and have very high concentrations of nutrients. Nutrient concentrations at all Wissahickon Creek stations and Sandy Run station S-TR indicate that nutrients are available in nonlimiting supplies for the development of excessive algal standing crops if light is nonlimiting. Benthic Chl-a concentrations were greater than 175 mg/m^2 for all open canopy stations, indicating nuisance levels of algae (Welch et al 1989, Biggs 1996). The positive relationship between Chl-a and inorganic N at open canopy sites illustrates that increasing nutrient concentrations will cause Chl-a to increase even when nutrient concentrations are extremely high. Zones of relatively stationary water (boundary zones) that develop within periphyton communities can reduce the input of nutrients to the community (Mullholland 1996). Nutrient uptake and subsequent depletion within the periphyton boundary zone are probably responsible for the positive biomass response to increasing inorganic N concentrations at stations with high Chl-a concentrations. Schubert's (1996) *Selenastrum capricornutum* Printz Algal Assay Bottle Test found Wissahickon surface water from four point source influenced main stem stations to be nonlimiting with respect to N and P concentrations. Schubert's study is consistent with the present study, because the Printz Algal Assay is performed with a phytoplanktonic alga in well mixed vessels and, therefore, no nutrient depleted boundary zone would be expected. Biomass at station T-GH was high suggesting that relatively low nutrient concentrations are required for accrual of high algal standing crop when canopy coverage is low. Storm water nutrient concentrations were not sampled, but may help explain the large algal biomass at station T-GH.

Table 7 presents an ecoregion (64) specific summary of nutrient data for ambient reference streams and the Wissahickon Water Quality Network Station. Wissahickon Creek near its mouth, where nutrient concentrations are lower than in the upper watershed, has inorganic nitrogen levels several times higher than reference streams (except Muddy Creek), and total phosphorus concentrations 18 to 25 times higher than reference streams. Ratios of N:P suggest that algal communities in Ecoregion 64 streams that are minimally impacted by anthropogenic

pollution and have similar geology to the Wissahickon Watershed are phosphorus limited (Borchardt 1996). While N:P ratios in natural stream conditions are helpful when discussing restoration efforts, the N:P ratio shown for Wissahickon Creek is irrelevant because nutrients are present in overwhelming supply.

Diatom assemblages have proven to be reliable indicators of water quality (Barbour 1999) and may be better predictors of eutrophication than standing crop when hydrologic disturbance is high (Kelly 1996). The Trophic Diatom Index classified all stations as eutrophic, indicating that nutrient levels are sufficient to sustain high algal biomass with adequate light. TDI scores for Prophecy Creek conflict with other indicators (nutrients, Chl-a, other diatom metrics, macroinvertebrates), which suggest fair to good conditions. Generally, weighted average phosphorus indices utilizing diatoms provide good separation of stream trophic states (Don Charles, ANSP, personal communication). The assemblages indicative of the poorest water quality were found at stations T-GH, S-TR, and W-NW. These stations also had correspondingly high benthic algal biomass and % coverage of macroalgae. Some stations (W-73, W-BM) had metric scores that conflicted with other measures of station health (nutrients, biomass, % canopy cover).

Three stations, T-GH, W-NW and W-PR, had macroalgae coverage greater than the 40% threshold that had been related to aesthetic nuisance levels of algae (Biggs 1996). Moss was included in coverage estimates for station S-TR. Moss and macroalgae coverage combined exceeded 40 % for this station.

Nutrients, excessive biomass accrual and floral community shifts can cause water quality problems (Dodds and Welch 2000) and changes in macroinvertebrate community structure (Mason 1996). NIER's diel dissolved oxygen data shows large DO swings and violations of Chapter 93 Criteria at stations S-TR and W-NW. Everett and Ateyeh (1999, nonreported DEP data) found substantial DO swings and minimum DO violations at S-TR, W-NW, W-GA and W-73 indicating excessive in-stream biomass. Many macroinvertebrates that are sensitive to organic pollution require high dissolved oxygen. Past macroinvertebrate surveys in the Wissahickon Creek have found few sensitive EPT genera and communities that are facultative with respect to organic pollution (Boyer 1997). Nutrients, light, and resultant biomass accrual and low dissolved oxygen are in part responsible for impaired macroinvertebrate communities.

Community shifts from low growing diatoms to filamentous green algae and stalked or filamentous diatoms are associated with increasing nutrients and biomass (Biggs 1996). Some filamentous chlorophytes are too large for macroinvertebrates to effectively graze (Steinman 1996). Therefore, abundances of macroinvertebrates may be altered by algal community shifts, with a reduction in grazer feeding groups and an increase in filter collectors that can utilize sloughed filamentous algae. Algal community shifts in Wissahickon Creek may negatively impact macroinvertebrate assemblages by altering food quality.

Chl-a showed a strong negative relationship with percent canopy coverage, suggesting that when N and P are present in nonlimiting concentrations, riparian canopy cover and resultant shading limits standing crop. A preliminary assessment of paired forested and nonforested sites within the Southeastern Pennsylvania piedmont physiographic province showed larger Chl-a standing crops (8X to 77X) for unforested reaches than for forested reaches in urbanized watersheds (> 50% urban) (Hession et al 2000). A nonforested reach in a largely forested watershed (> 70% forested) (Beaver Run, HQ-TSF) showed a Chl-a standing crop that was 2.5 times higher than the standing crop found in the forested reach. However, both Chl-a concentrations in Beaver Run represented oligotrophic conditions. Diatom floras in the unforested reaches were found to have lower diversity and evenness.

The relationship between percent canopy coverage and Chl-a for the Wissahickon Watershed would indicate that percent canopy coverage, as measured with the spherical densiometer, would need to be > 53% in order to achieve Chl-a concentrations below Dodds' mesotrophic-eutrophic mean Chl-a boundary of 70 mg/m³. Riparian reforestation on 1st, 2nd, and 3rd order streams where canopy can overreach the channel (ex. Trewellyn Creek) should provide benefits by decreasing nuisance algal conditions and restoring a more natural benthic flora. Reduction of filamentous chlorophytes should also benefit macroinvertebrate and fish communities by providing more easily used food resources and higher dissolved oxygen concentrations. Wider stream reaches (4th order) would not benefit as greatly from shading, but riparian buffers could still provide an important light limitation function. Department biologists frequently note large aerial cover of long stranded filamentous green algae in streams that indicate potential eutrophication. The rapid periphyton survey in combination with nutrient sampling could provide a quick semi-quantitative method for describing benthic algal conditions. While not significantly correlated with Chl-a in this study, percent macroalgae coverage and maximum macroalgae length were positively correlated with standing crop. Two of the sites, which had the highest maximum macroalgae lengths, also had dissolved oxygen violations and high Chl-a standing crops indicative of eutrophic conditions.

Conclusions

1. Based upon suggested eutrophication criteria from current literature and Pa DEP Water Quality Standards for dissolved oxygen, the Wissahickon Creek and Sandy Run are eutrophic, exhibiting high nutrients and causal biological responses (Chl-a, macroalgae coverage, TDI, and DO) (Table 8).
2. Benthic algal standing crop (Chl-a) was negatively related to percent canopy cover, illustrating the importance of riparian vegetation in limiting biomass when eutrophication potential (ie. nutrients) is high. The Wissahickon Watershed's fair to good existing riparian corridors are protecting the stream from more widespread nuisance algal conditions and DO violations that could further erode ecological health.
3. Autotrophic index values, BOD concentrations, % DO saturation, and visual observations from the present study along with macroinvertebrate data from other DEP assessments provide evidence that organic enrichment negatively impacts benthic communities at stations S-TR and W-GA.
4. Trewellyn Creek station T-GH, a storm water influenced station, had high benthic algal standing crops (Chl-a), but low to moderate base flow nutrient concentrations (Ing.N = 222ug/l, TRP = 50 ug/l), suggesting these nutrient levels can maintain nuisance benthic standing crops with adequate light. This is in agreement with other studies (Borchardt 1996, Welch et al 1989) and would suggest low nutrient concentration goals for stream restoration.
5. Rapid periphyton assessments may provide a good semi-quantitative screening tool for Department biologists in determining stream segments that require additional biomass or community biological sampling.

Recommendations

1. This study supports the listing of Wissahickon Creek on the Pennsylvania 303d list for nutrients. TMDLs should be developed and implemented for nutrient reduction in the Wissahickon Watershed. Past Department studies and NIER's base flow water quality

report indicate that point sources account for the majority of nutrient loading in the Wissahickon Watershed.

2. Riparian reforestation and maintenance of existing buffers should be encouraged throughout the watershed. Generally, the lower main stem Wissahickon Creek including stream segments in Fort Washington State Park and Fairmount Park have good riparian buffers (personal observation). Ecological and water quality benefits of riparian buffers are scientifically defensible. Riparian buffers should be protected in the Department Rules and Regulations (Chapter 105).
3. The Department will be required to develop nutrient criteria, including response criteria (e.g. Biomass, DO) by 2003. Including periphyton (standing crop and community indices) in criteria development would provide a more direct trophic link between nutrients and biological impairment. Development of protocols, a monitoring program, and an index of biotic integrity for periphyton would provide the Department with another assessment tool that could supplement macroinvertebrate and fish data.
4. The contribution of organic enrichment to stream impairment should be evaluated further for stream segments located downstream from Ambler Borough STP and Abington Township STP.

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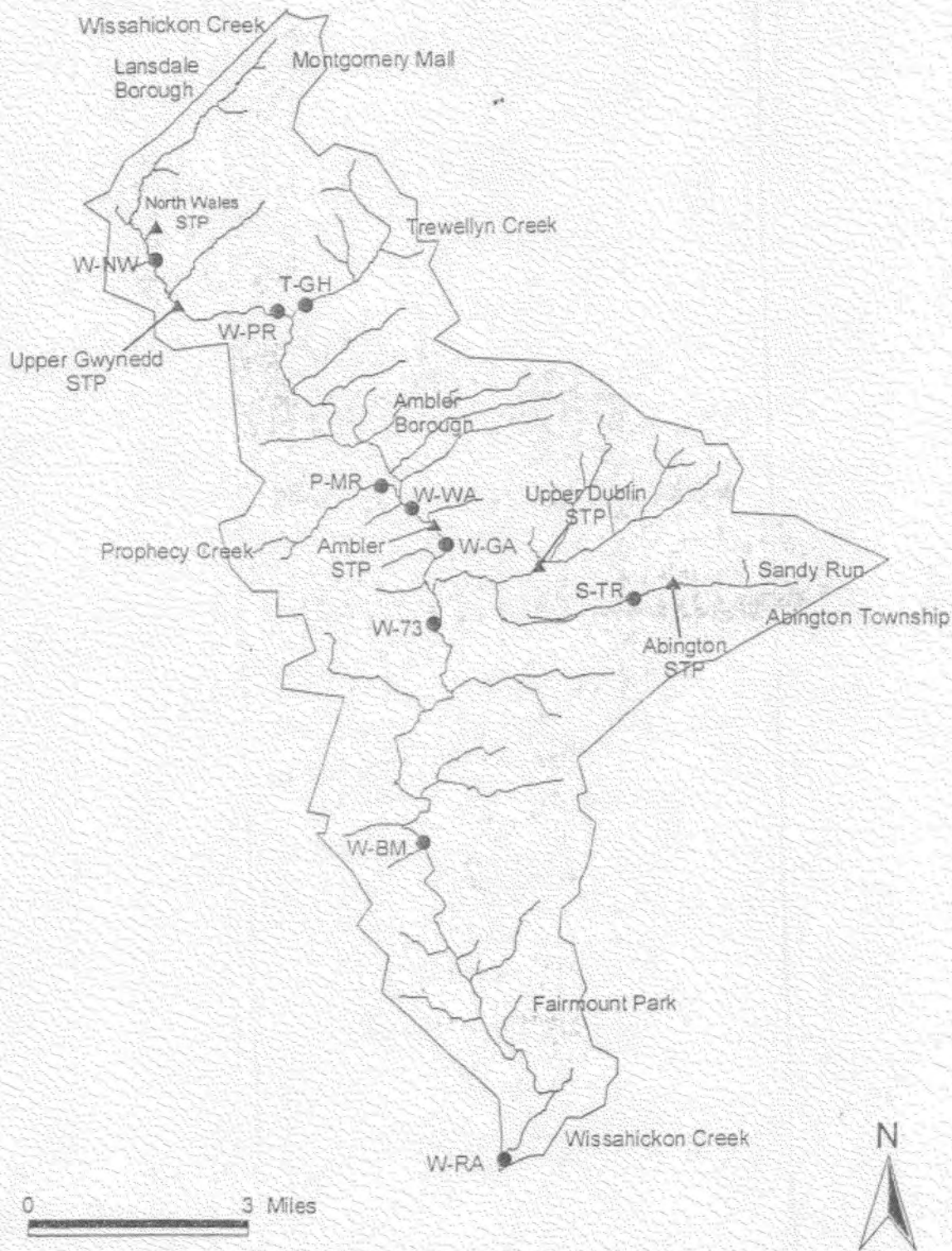


Figure 1. Wissahickon Creek Watershed. Locations of 10 sampling sites on Prophecy Creek, Trewellyn Creek, Sandy Run, and Wissahickon Creek are shown.

Table 1. Station Locations with corresponding NIER station IDs.

DEP/ANSP Station	NIER Station	River Mile	Latitude	Longitude	Location
P-MR	NIER-P	0.3	40.1520	-75.2311	Prophecy Creek near confluence with Wiss.
T-GH	NIER-T	0.2	40.1877	-75.2532	Trewellyn Creek at Gypsy Hill Rd. Bridge
S-TR	NIER-SR2	3.5	40.1269	-75.1686	Sandy Run at Twinning Rd. Bridge
W-NW	NIER-4	19.3	40.1988	-75.2895	Wissahickon at North Wales Rd. Bridge
W-PR	NIER-6A	16.9	40.1863	-75.2550	Wissahickon at Plymouth Rd. Bridge
W-WA	NIER-10	12.7	40.1469	-75.2260	Wissahickon at WWA
W-GA	NIER-11	12.0	40.1392	-75.2170	Wissahickon at Morris Rd. Bridge
W-73	NIER-12	10.6	40.1238	-75.2209	Wissahickon at Rt. 73
W-BM	NIER-15	6.1	40.0793	-75.2260	Wissahickon at Bells Mill Rd. Bridge
W-RA	NIER-20	0.1	40.0144	-75.2073	Wissahickon at Ridge Ave Bridge

Table 2. NIER Wissahickon base flow water quality sampling : diel dissolved oxygen and temperature results for periphyton survey stations.

	Dates	n	Avg. Temp °C	Avg. DO mg/l	Avg. DO Sat. %	Avg. Diel Swing (mg/l)	Min. DO mg/l	Max. DO mg/l
P-MR	not sampled							
T-GH	not sampled							
S-TR	8/1/98 to 8/16/98	14	23.2	6.42	75	5.60	3.09	10.41
W-NW	8/4/98 to 8/16/98	13	22.8	4.16	49	5.90	1.34	6.92
W-PR	9/15/98 to 9/29/98	15	21.3	7.90	90	3.67	5.64	12.06
W-WA	7/30/1998 to 8/16/98	18	23.5	7.95	94	3.97	5.25	11.74
W-GA	8/26/98 to 9/8/98	14	22.7	6.98	81	2.72	5.25	9.39
W-73	7/30/98 to 8/16/98	17	23.0	6.81	80	3.15	4.98	9.35
W-BM	7/31/98 to 8/7/98	8	21.9	8.27	95	1.74	7.04	10.17
W-RA	9/16/98 to 9/29/98	14	20.0	8.78	97	3.20	7.11	12.38

Where : highlighted data are violations of Chapter 93 Water Quality Standards

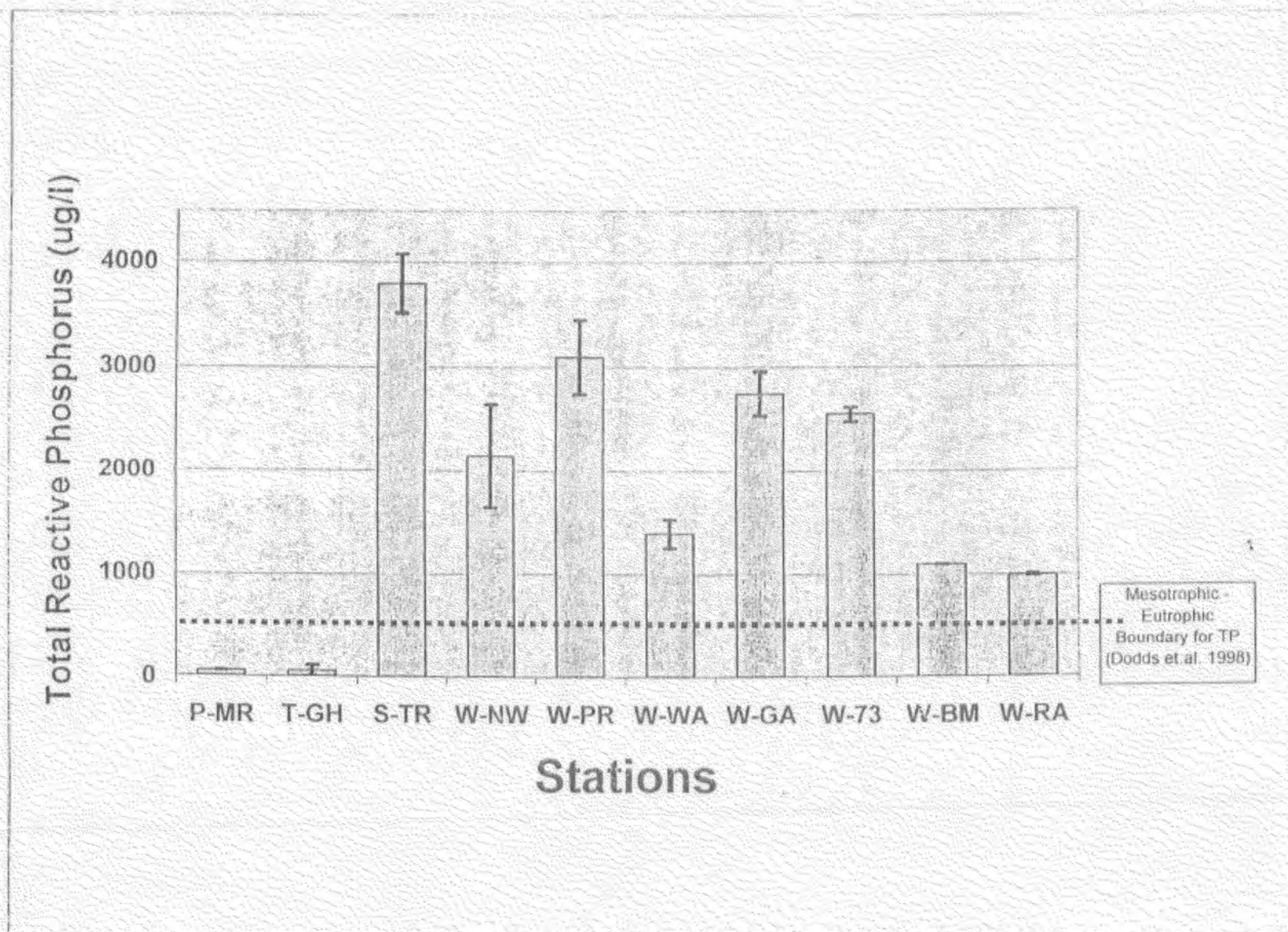


Figure 2. Total reactive phosphorus concentration (mean \pm 1SE) for stations. Suggested mesotrophic-eutrophic boundary for TP shown as dotted line ($= 75 \mu\text{g/l}$).

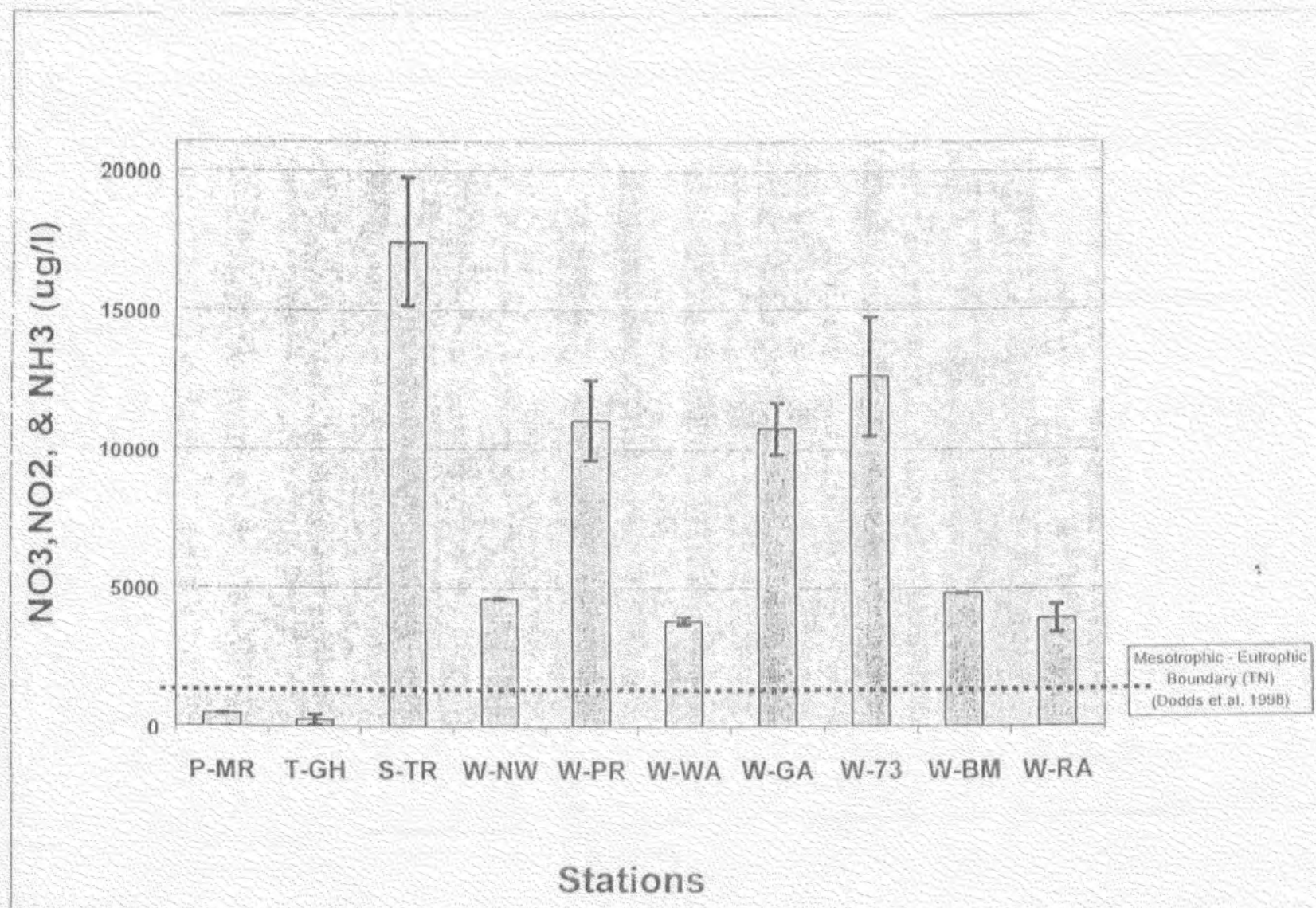


Figure 3. Inorganic nitrogen concentration (mean +/- 1SE). Inorganic nitrogen = $\text{NH}_3 + \text{NO}_3 + \text{NO}_2$. Suggested mesotrophic-eutrophic boundary concentration for TN shown as dotted line (= 1500ug/l)

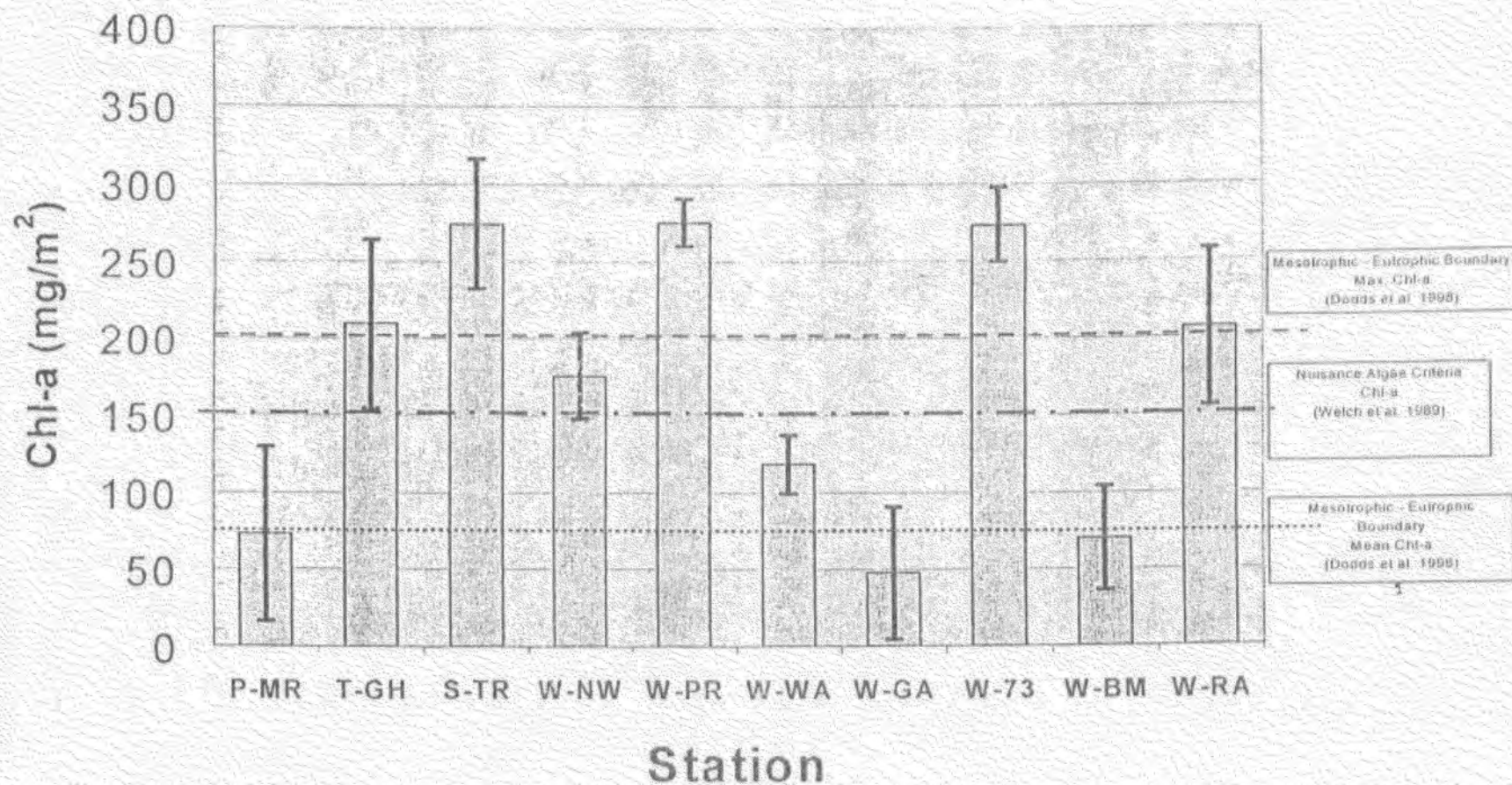


Figure 4. Periphyton standing crop as Chlorophyll-a (mg/m^2) (mean \pm 1SE, $n=3$). Suggested mesotrophic-eutrophic boundary for maximum chl-a shown as dashed line ($= 200 \text{ mg/m}^2$). Suggested boundary for nuisance algal conditions shown as dash-dot line ($= 150 \text{ mg/m}^2$). Suggested mesotrophic-eutrophic boundary for mean chl-a shown as a dotted line ($= 70 \text{ mg/m}^2$).

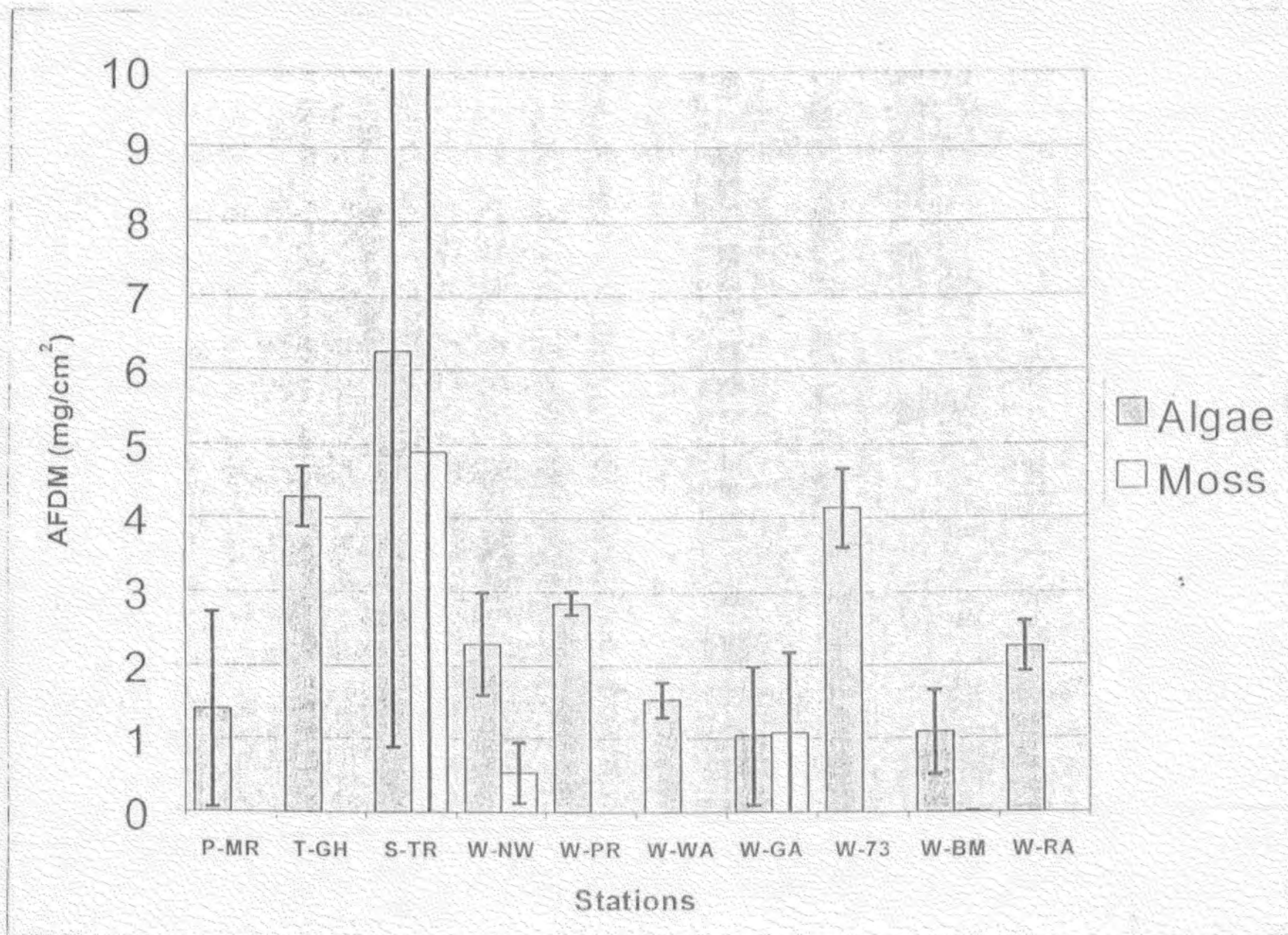


Figure 5. Periphyton and moss standing crop as AFDM (mg/cm²), mean \pm 1SE, n=3.

Table 3. Diatom Community Metrics. Where: TDI = Trophic Diatom Index, % Dominants = % of total diatom valves which accounted for greater than 10% of overall abundance, Siltation Index = % of motile genera (*Navicula*, *Nitzschia*, *Cylindrotheca*, and *Surirella*).

Station	Total Count	# of Taxa	Shannon-Wiener			
			TDI (%)	Diversity Index (base 2)	% Dominants	Siltation Index
P-MR	600	42	86	3.60	27.00	0.51
T-GH	617	28	79	1.52	73.42	0.86
S-TR	602	31	83	2.41	60.63	0.72
W-NW	604	33	92	2.78	63.87	0.59
W-PR	601	36	83	2.67	53.41	0.57
W-WA	602	35	84	2.99	42.86	0.64
W-GA	611	35	92	2.88	57.61	0.51
W-73	611	48	83	3.44	27.33	0.61
W-BM	611	38	76	2.45	71.19	0.60
W-RA	609	42	85	3.20	56.81	0.48

Table 4. Aquatic macrophyte survey results. Where : * = found exclusively along stream margins, x = not found, R= rare , P = present, C = common and A = abundant.

Aquatic Macrophytes	Station									
	P-MR	T-GH	S-TR	W-NW	W-PR	W-WA	W-GA	W-73	W-BM	W-RA
Undet. Moss	x	x	A	C	x	x	C	P	P	P
<i>Callitriche</i> sp.*	x	x	x	P	R	R	R	R	x	x
<i>Elodea</i> sp.	x	P	x	P	x	x	x	x	x	x
<i>Myriophyllum</i> sp.	x	R	x	x	x	x	x	C	x	x
<i>Nasturtium</i> sp.*	x	x	C	x	C	x	x	x	x	x
<i>Potamogeton</i> sp.	x	x	x	R	x	x	x	R	x	x

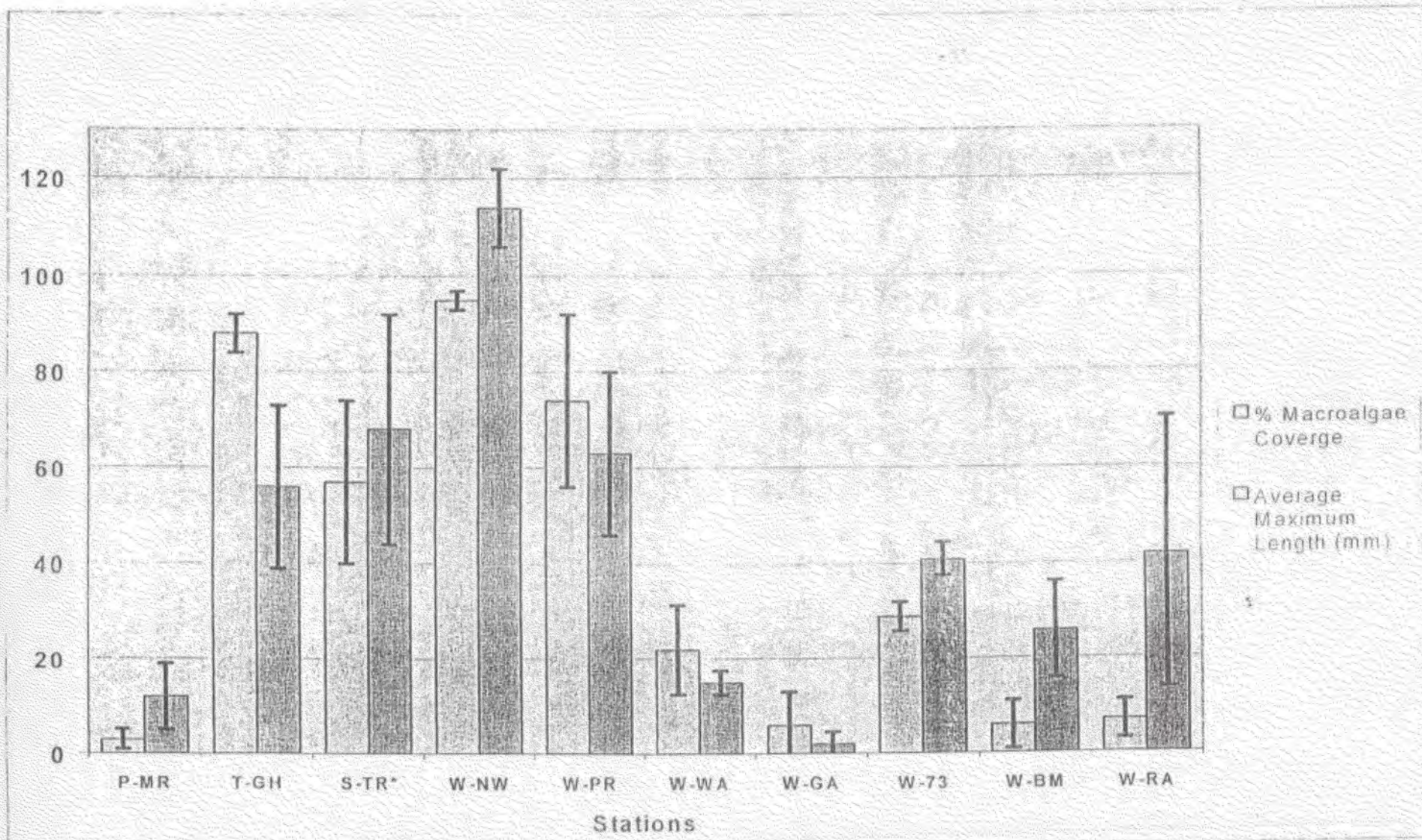


Figure 6. Results of field-based rapid periphyton survey : Percent Macroalgae Coverage (mean +/- 1 SE, n=3) and Maximum Macroalgae Length (mm) (mean +/- 1 SE, n=3), Where * = moss coverage included in macroalgae coverage.

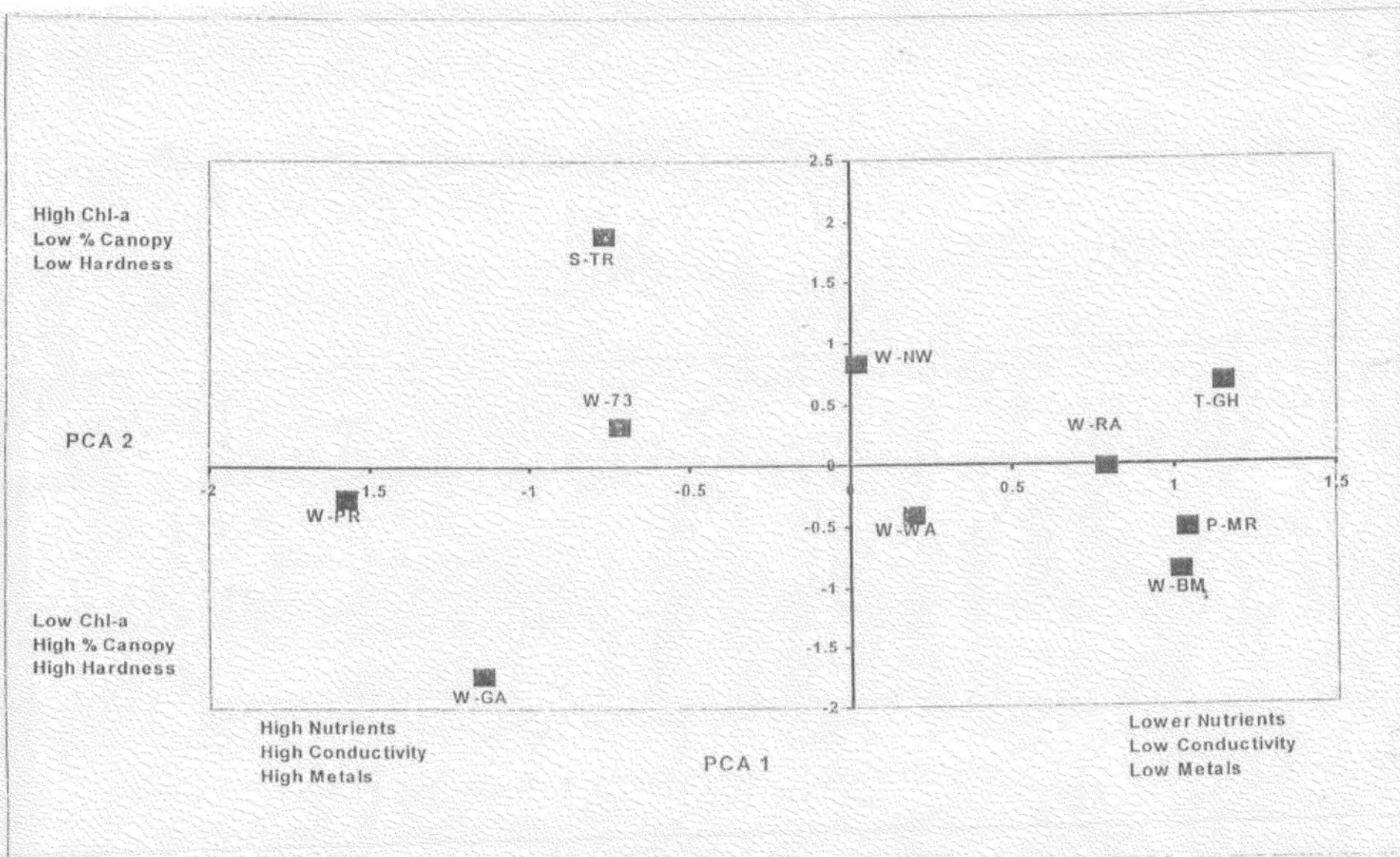


Figure 7. Principal Component Analysis of select physicochemical and biological variables. Positive and negative loading coefficients greater than 0.70 (Appendix 4) are shown on axis 1 and axis 2. PCA 1 explained 34% of total station variance and PCA 2 explained 21% of total station variance.

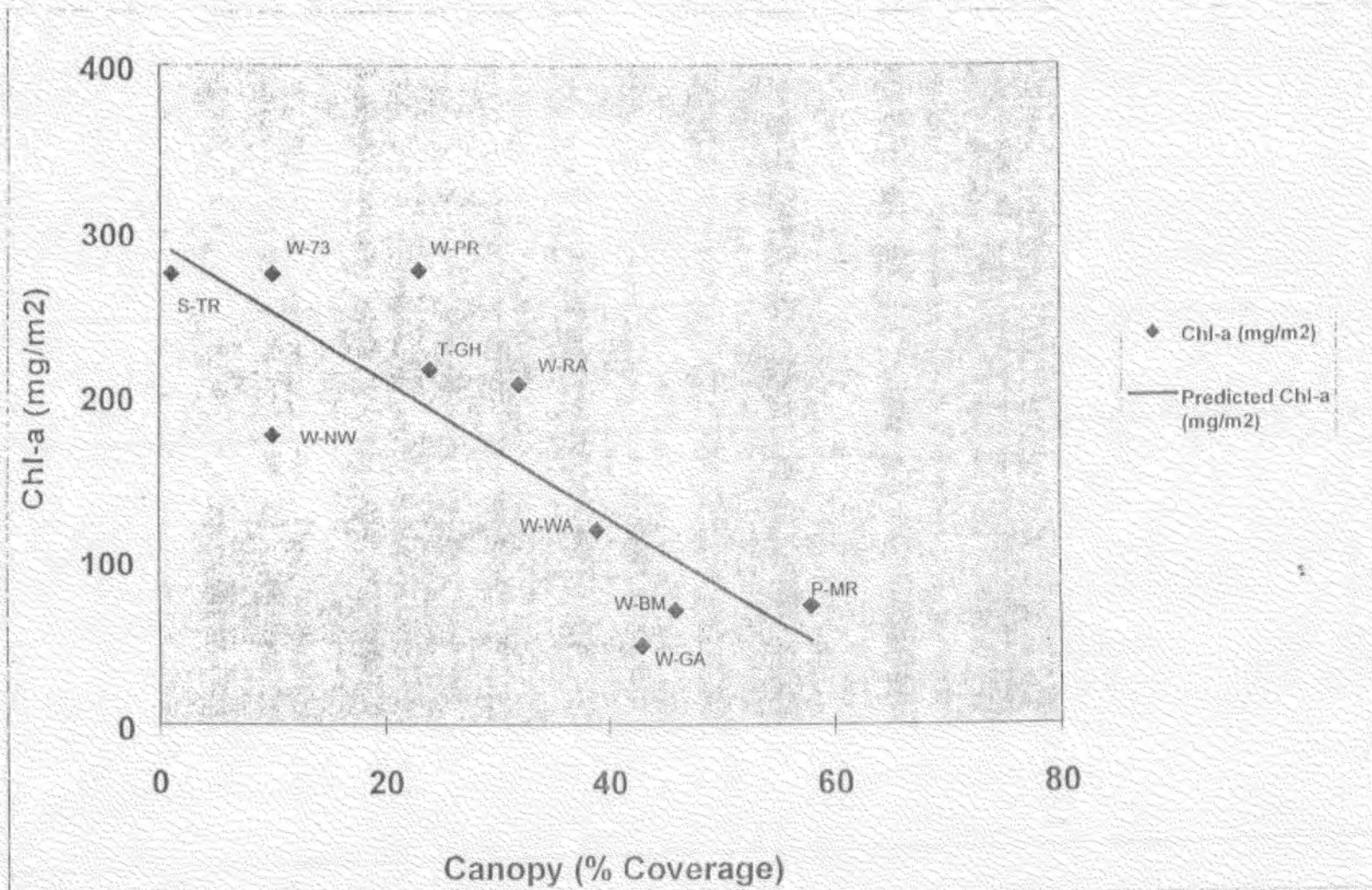


Figure 8. Linear regression showing the relationship between % canopy cover (dependent variable) and Chl-a (mg/m^2). Diamonds represent station data and line represents predicted Chl-a ($y = -4.18x + 292$, $r^2 = 0.71$, $P < 0.005$).

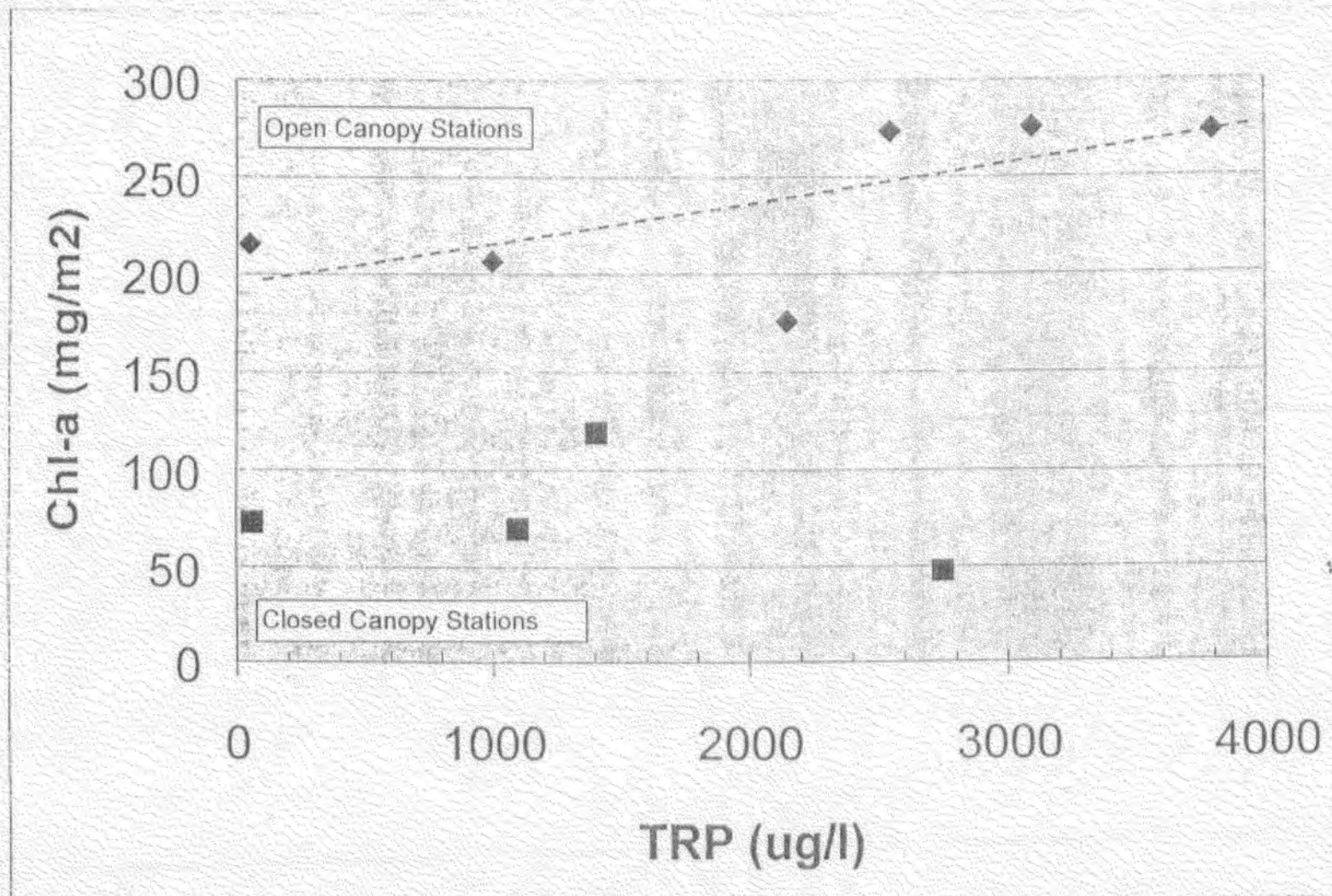


Figure 9. Relationship between total reactive phosphorus (ug/l) and chlorophyll-a (mg/m²). Diamonds represent open canopy stations (1 to 32% canopy cover range) and squares represent closed canopy stations (39 to 58% canopy cover range). Dashed line represents predicted Chl-a ($y = 0.02x + 195$, $r^2 = 0.41$, $p > 0.05$) at open canopy sites.

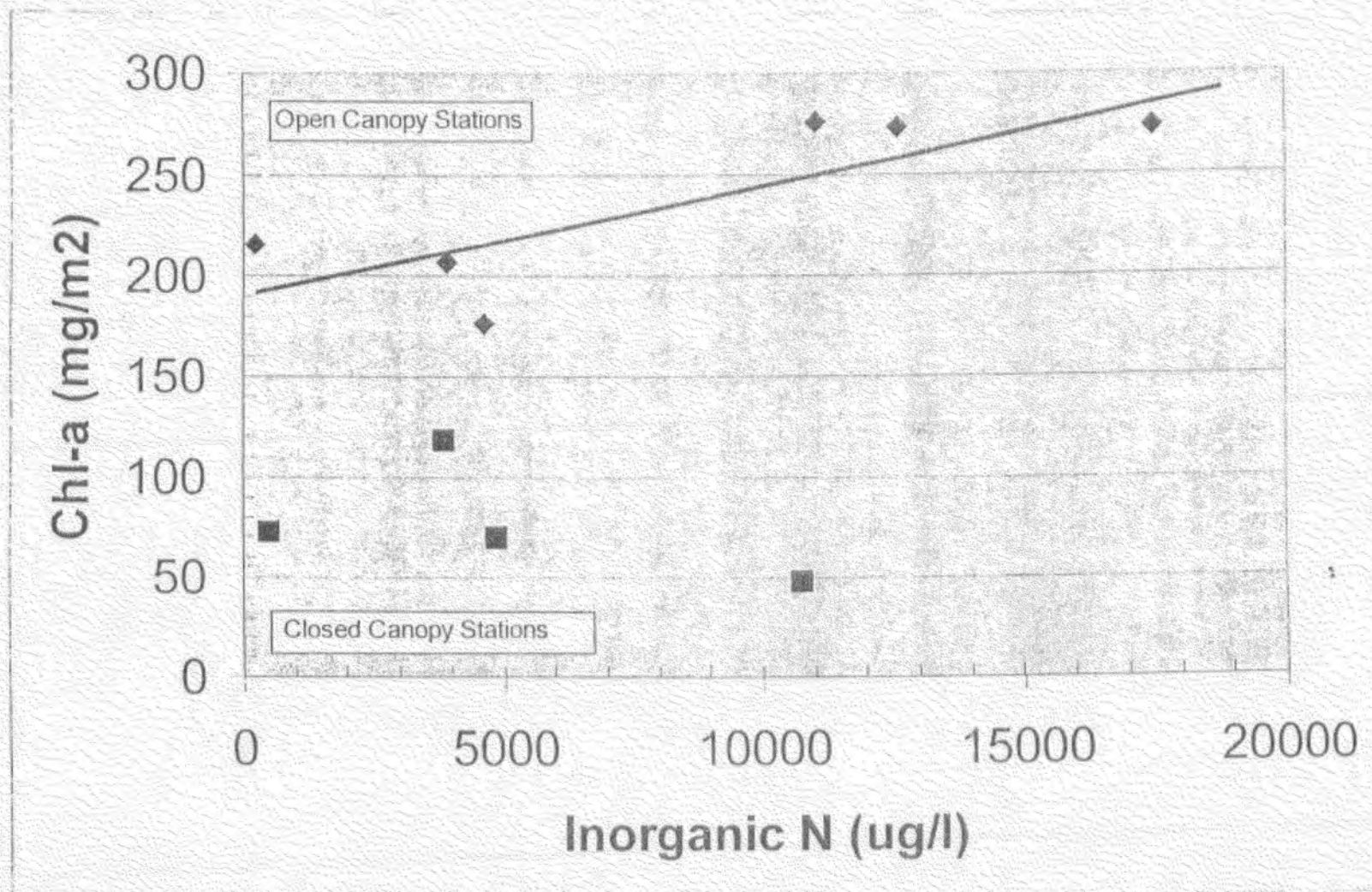


Figure 10. Relationship between inorganic nitrogen (ug/l) and chlorophyll-a (mg/m^2). Diamonds represent open canopy stations (1 to 32% canopy cover range) and squares represent closed canopy stations (39 to 58% canopy cover range). Solid line represents predicted Chl-a ($y = 0.0054x + 192$, $r^2 = 0.66$, $p < 0.05$) at open canopy sites.

Table 5. Nutrient data for ambient reference streams in Ecoregion 64 and Wissahickon Creek at W-RA (WQN 115). Concentrations represent geometric means for monthly sampling. The Wissahickon Watershed is located in three subcoregions (a,c, and d). WQN 115 is located in 64c.

Creek	Subcoregion	Yrs. of Data Acquisition	Inorganic N (ug/l)	TP (ug/l)	N:P
Cooks Creek	64d	1998-2000	1837	24	76:1
Tinicum Creek	64a	1998-2000	507	26	20:1
French Creek	64c	1999-2000	1298	28	46:1
Muddy Creek	64	1990-2000	4511	34	133:1
Wissahickon Creek*	64a,c,d	1990-2000	4200	622	7:1

Table 6. Wissahickon Creek periphyton stations compared to suggested eutrophication criteria(nutrient and biological) and Pa DEP Water Quality Standards for Dissolved Oxygen. A yes value indicates that the station exceeded the criteria. Where : ns = not sampled, * = 1998 NIER and 1999 DEP sampling, and ** = moss coverage included in macroalgae coverage.

Station	Nutrients (ug/l)	Chl-a (mg/m ²)	Macroalgae Coverage	TDI	DO (mg/l)*
	TN > 1500, TP > 75	150	> 40%	> 67 %	+ 5.0 (2/15-7/31), < 4.0 (8/1-2/14)
	(Dodds et al. 1998)	(Welch et al. 1989)	(Biggs, 1995)	(Kelly, 1996)	(Pa DEP Chap 93)
P-MR	No	No	No	Yes	ns
T-GH	No	Yes	Yes	Yes	ns
S-TR	Yes	Yes	Yes**	Yes	Yes
W-NW	Yes	Yes	Yes	Yes	Yes
W-PR	Yes	Yes	Yes	Yes	No
W-WA	Yes	No	No	Yes	No
W-GA	Yes	No	No	Yes	Yes
W-73	Yes	Yes	No	Yes	Yes
W-BM	Yes	No	No	Yes	No
W-RA	Yes	Yes	No	Yes	No

Appendices

Stations	Units	P-MR	T-GH	S-TR	W-NW	W-PR	W-WA	W-GA	W-73	W-BM	W-RA
NIER Chem. Sampling Dates		9/1	8/25, 9/1, 9/10	9/3, 9/10	8/24, 9/2	9/1, 9/10	8/25, 9/2	8/25, 9/2	9/1, 9/15	9/3	9/4, 9/11
Bio. Sampling Dates		9/11	9/15	9/14	9/10	9/15	9/11	9/11	9/15	9/14	9/14
NIER Diel Sampling Dates				8/1 to 8/16	8/4 to 8/16	9/15 to 9/29	7/30 to 8/16	8/26 to 9/8	7/30 to 8/16	7/31 to 8/7	9/16 to 9/29
Stream Order	Order		2	3	2	2	2	3	3	4	4
Stream Width	m		2.5	1.8	7.2	4.8	8.1	8.5	8.5	15.6	21.7
Flow (Baseflow)	cfs			0.1	5.3	1.5	2.5	4.5	11.6	16.5	30.4
Canopy (% Coverage)	%		58	24	1	10	23	39	43	10	46
% Boulder/Cobble	%		35	65	35	50	60	65	55	35	80
Total Reactive Phosphorus	ug/l		60	50	3600	2150	3100	1400	2750	2550	1100
Inorganic Nitrogen	ug/l		480	222	17478	4641	11050	3832	10760	12620	4840
Conductivity	umhos/cm		518	379	703	575	1175	991	989	848	725
Hardness	mg/l		220	143	180	130	200	190	235	195	230
Cu	ug/l		9.0	7.5	12.8	12*	34**	12.5	23*	12.5	4.5
Fe	ug/l		24	25	33	38	125	34	49	35	17
Zn	ug/l		7	6	42	11	105	45	45	35	12
Pb	ug/l		2.0	1.7	1.0	1.0	3.0	1.5	4.0	1.5	1.0
BOD ₅	mg/l		1.0	1.0	1.0	2.1	1.5	1.0	4.2	4.3	1.0
BOD ₂₀	mg/l		1.0	1.0	3.2	5.9	2.5	2.4	6.6	5.1	1.0
CBOD ₅	mg/l		1.0	1.0	1.0	1.0	1.5	1.0	2.5	1.8	1.0
Aean DO (NIER Sonde)	mg/l				6.4	4.2	7.9	8.0	7.0	6.8	8.3
avg. DO Diel Swing	mg/l				5.6	5.9	3.7	4.0	2.7	3.2	1.7
avg. Temp. (NIER Sonde)	°C				23.2	22.8	21.3	23.5	22.7	23.0	21.9
pH	STU		7.9	8.0	8.1	7.9	8.1	7.8	7.9	7.9	8.2
Total Solids	mg/l		1.0	2.0	1.3	0.8	1.5	3.0	6.0	12.5	4.0
Turbidity	ntu		1.1	1.3	1.5	2.2	1.2	1.6	3.6	2.5	1.9
Fecal Coliform	#/100ml		230	304	2754	437	432	524	269	348	220
chl-a	mg/m ²		73	216	274	176	276	119	48	274	70
FDM	mg/cm ²		1.40	4.29	6.25	2.29	2.85	1.53	1.04	4.14	1.09
Autotrophic Index			180	206	241	128	103	130	250	152	152
Macroalgae Coverage	%		3	88	57***	95	74	22	6	29	6
Macroalgae Max. L.	mm		12	56	68	114	63	15	2	41	26
Autotrophic Diatom Index (ANSP)	%		86	79	83	92	83	84	92	83	76

Where : highlighted data are violations of Chapter 93 (Water Quality Standards) or Chapter 16 (Toxics).

* = Fish and aquatic life criteria (continuous)

** = Fish and aquatic life criteria (continuous and maximum)

*** = moss included in macroalgae coverage

Appendix 2. Descriptive statistics and analysis of variance for Chlorophyll-a, Pheophytin, AFDM, Autotrophic Index, Percent Macroalgae Coverage, and Maximum Macroalgae Length. Where: SD = standard deviation, CV = coefficient of variation, and V = variance, V-LT = \log_{10} transformed variance.

Chl-a :Mean, SD, CV,V & ANOVA 1998 Wissahickon Periphyton Survey

Station	Chlorophyll a (ug/cm2)				chl-a mg/m2
	Mean	SD	CV	V	
P-MR	7.3	5.7	78	32.4	73
T-GH	21.6	5.5	25	30.8	216
S-TR	27.5	4.2	15	17.7	275
W-NW	17.6	2.8	16	8.0	176
W-PR	27.6	1.5	5	2.2	276
W-WA	11.9	1.9	16	3.6	119
W-GA	4.8	4.3	90	18.1	48
W-73	27.4	2.4	9	5.7	274
W-BM	7.0	3.4	49	11.6	70
W-RA	20.7	5.1	25	25.8	207

Chlorophyll a, P-values, <0.05 Highlighted

Station	P-MR	T-GH	S-TR	W-NW	W-PR	W-WA	W-GA	W-73	W-BM	W-RA
P-MR	1.000									
T-GH	0.036	1.000								
S-TR	0.008	0.213	1.000							
W-NW	0.049	0.321	0.027	1.000						
W-PR	0.004	0.141	0.971	0.005	1.000					
W-WA	0.255	0.045	0.004	0.045	<0.001	1.000				
W-GA	0.575	0.014	0.003	0.012	0.001	0.058	1.000			
W-73	0.005	0.168	0.973	0.010	0.908	0.001	0.001	1.000		
W-BM	0.935	0.017	0.003	0.014	0.001	0.094	0.529	0.001	1.000	
W-RA	0.039	0.840	0.147	0.407	0.085	0.049	0.014	0.105	0.018	1.000

Pheophytin : Mean, SD, CV,V & ANOVA 1998 Wissahickon Periphyton Survey

	Pheophytin a (ug/cm2)				mg/m2
	Mean	SD	CV	V	
P-MR	1.7	1.4	82	2.01	17
T-GH	2.7	0.4	15	0.19	27
S-TR	4.6	2.4	52	5.86	46
W-NW	4.2	1.1	26	1.17	42
W-PR	5.1	0.4	8	0.11	51
W-WA	2.0	0.2	10	0.05	20
W-GA	0.6	0.6	100	0.28	6
W-73	6.1	1.2	20	1.38	61
W-BM	2.1	0.8	38	0.77	21
W-RA	5.0	1.1	22	0.11	50

Pheophytin a, P-values, <0.05 Highlighted

Station	P-MR	T-GH	S-TR	W-NW	W-PR	W-WA	W-GA	W-73	W-BM	W-RA
P-MR	1.000									
T-GH	0.267	1.000								
S-TR	0.135	0.245	1.000							
W-NW	0.061	0.078	0.823	1.000						
W-PR	0.014	0.001	0.742	0.257	1.000					
W-WA	0.655	0.056	0.134	0.023	<0.001	1.000				
W-GA	0.320	0.006	0.048	0.001	<0.001	0.015	1.000			
W-73	0.013	0.009	0.390	0.113	0.233	0.004	0.002	1.000		
W-BM	0.584	0.377	0.171	0.056	0.005	0.755	0.054	0.009	1.000	
W-RA	0.009	0.025	0.685	0.206	0.702	<0.001	<0.001	0.280	0.004	1.000

AFDM :Mean, SD, CV,V & ANOVA 1998 Wissahickon Periphyton Survey

	Ash-Free Dry Mass (mg/cm2) algae				
	Mean	SD	CV	V	V-LT
P-MR	1.40	1.33	95	1.78	**
T-GH	4.29	0.41	10	0.17	
S-TR	6.25	5.37	86	28.84	0.12
W-NW	2.29	0.70	31	0.49	
W-PR	2.85	0.15	5	0.02	0.0006
W-WA	1.53	0.24	16	0.06	
W-GA	1.04	0.94	90	0.88	
W-73	4.14	0.53	13	0.28	
W-BM	1.09	0.57	52	0.32	
W-RA	2.26	0.34	15	0.12	

AFDM (algae), P-values, <0.05 Highlighted (log transformed)

Station	P-MR	T-GH	S-TR	W-NW	W-PR	W-WA	W-GA	W-73	W-BM	W-RA
P-MR	1.000									
T-GH	0.061	1.000								
S-TR	0.094	0.766	1.000							
W-NW	0.260	0.028	0.180	1.000						
W-PR	0.138	0.003	0.297	0.253	1.000					
W-WA	0.528	<0.001	0.066	0.149	0.003	1.000				
W-GA	0.680	0.062	0.081	0.189	0.117	0.336	1.000			
W-73	0.067	0.684	0.708	0.038	0.011	0.001	0.068	1.000		
W-BM	0.924	0.017	0.051	0.119	0.044	0.306	0.701	0.019	1.000	
W-RA	0.235	0.004	0.167	0.948	0.065	0.040	0.176	0.007	0.093	1.000

Autotrophic Index :Mean, SD, CV,V & ANOVA

1998 Wissahickon Periphyton Survey

Station	Maximum Length (mm)			V	V-LT
	Mean	SD	CV		
P-MR	180	64	36	4100	
T-GH	206	44	21	1971	
S-TR	241	228	95	52146	0.1477
W-NW	128	20	16	399	
W-PR	103	4	4	14	0.00027
W-WA	130	32	25	996	
W-GA	250	76	30	5822	
W-73	152	29	19	837	
W-BM	152	28	18	792	
W-RA	112	17	15	301	

Autotrophic Index, P-values, <0.05 Highlighted (Log Transformed)

Station	P-MR	T-GH	S-TR	W-NW	W-PR	W-WA	W-GA	W-73	W-BM	W-RA
P-MR	1.000									
T-GH	0.550	1.000								
S-TR	0.916	0.843	1.000							
W-NW	0.314	0.036	0.526	1.000						
W-PR	0.106	0.005	0.331	0.103	1.000					
W-WA	0.356	0.061	0.544	0.954	0.188	1.000				
W-GA	0.301	0.445	0.623	0.029	0.008	0.042	1.000			
W-73	0.654	0.129	0.734	0.296	0.025	0.400	0.076	1.000		
W-BM	0.658	0.133	0.736	0.296	0.026	0.398	0.077	0.095	1.000	
W-RA	0.170	0.015	0.397	0.370	0.479	0.428	0.016	0.096	0.999	1.000

Macroalgae (% Coverage) :Mean, SD, CV,V & ANOVA
1998 Wissahickon Periphyton Survey

Station	Macroalgae (% Coverage)			
	Mean	SD	CV	V
P-MR	3.1	2.1	68	4.4
T-GH	88.0	4.4	5	19.4
S-TR*	57.3	17.7	31	311.8
W-NW	94.5	2.0	2	4.0
W-PR	74.0	18.0	24	324.0
W-WA	22.4	9.5	42	90.3
W-GA	6.2	7.1	115	50.4
W-73	29.4	3.0	10	9.0
W-BM	5.8	5.4	93	29.2
W-RA	7.1	3.8	54	14.4

* = moss was included with macro coverage estimate, sample was not included in ANOVA and correlation analyses.

Macroalgae (% Coverage), P-values, <0.05 Highlighted

Station	P-MR	T-GH	W-NW	W-PR	W-WA	W-GA	W-73	W-BM	W-RA
P-MR	1.000								
T-GH	<0.001	1.000							
W-NW	<0.001	0.082	1.000						
W-PR	0.002	0.261	0.122	1.000					
W-WA	0.026	<0.001	<0.001	0.012	1.000				
W-GA	0.510	<0.001	<0.001	0.004	0.077	1.000			
W-73	<0.001	<0.001	<0.001	0.013	0.289	0.006	1.000		
W-BM	0.469	<0.001	<0.001	0.003	0.057	0.937	0.003	1.000	
W-RA	0.188	<0.001	<0.001	0.003	0.060	0.861	0.001	0.749	1.000

Macroalgae Maximum Length (mm) :Mean, SD, CV,V & ANOVA
1998 Wissahickon Periphyton Survey

Station	Maximum Length (mm)			
	Mean	SD	CV	V
P-MR	11.7	7.3	62	53.3
T-GH	56.1	17.1	30	292.4
S-TR*	68.3	24.0	35	576.0
W-NW	113.9	8.2	7	67.2
W-PR	62.8	16.8	27	282.2
W-WA	14.5	2.5	17	6.2
W-GA	2.2	2.5	114	6.2
W-73	40.6	3.4	8	11.6
W-BM	25.6	10.2	40	104.0
W-RA	41.9	28.2	67	795.2

Macroalgae Maximum Length (mm), P-values, <0.05 Highlighted

Station	P-MR	T-GH	S-TR	W-NW	W-PR	W-WA	W-GA	W-73	W-BM	W-RA
P-MR	1.000									
T-GH	0.014	1.000								
S-TR	0.018	0.513	1.000							
W-NW	<.001	0.006	0.036	1.000						
W-PR	0.008	0.656	0.759	0.009	1.000					
W-WA	0.564	0.014	0.018	<0.001	0.008	1.000				
W-GA	0.102	0.006	0.009	<0.001	0.004	0.004	1.000			
W-73	0.003	0.197	0.119	<0.001	0.088	<0.001	<0.001	1.000		
W-BM	0.127	0.056	0.047	<0.001	0.030	0.141	0.018	0.073	1.000	
W-RA	0.146	0.496	0.284	0.013	0.332	0.168	0.072	0.939	0.398	1.000

Appendix 3. Duplicate data for Chlorophyll-a, Pheophytin-a, and AFDM. Where sd = standard deviation and cv = coefficient of variation.

Wissahickon Periphyton Survey - 1998

Duplicate Data :

Sample ID	Chlorophyll a (ug/cm2)	Pheophytin a (ug/cm2)	AFDM (mg/cm2)
W-RA-C	22.40	5.90	2.73
W-RA-C dup	22.00	3.80	2.42
mean	22.2	4.9	2.6
sd	0.3	1.5	0.2
cv	1	31	8

Sample ID	Chlorophyll a (ug/cm2)	Pheophytin a (ug/cm2)	AFDM (mg/cm2)
W-PR-A	28.90	3.50	2.67
W-PR-A dup1	27.30	4.90	2.78
W-PR-A dup2	27.70	5.80	2.84
mean	28.0	4.7	2.8
sd	0.8	1.2	0.1
cv	3	26	4

Appendix 4. Results of Principal Components Analysis for select physicochemical and biological parameters.

Eigenvalues (algae2.sta)

Extraction: Principal components

	Eigenval	% total Variance	Cumul. Eigenval	Cumul. %
1	5.861616867	34.48009922	5.861617	34.4801
2	3.528553041	20.75619436	9.39017	55.23629

Factor Loadings (Unrotated) (algae2.sta)

Extraction: Principal components

(Marked loadings are > .700000)

	Factor 1	Factor 2
STR_WIDT	0.042263006	-0.272861375
CANOPY	0.450668449	-0.817438126
BLDR_COB	0.359642301	-0.406362883
TRP	-0.909575663	0.246628879
INORG_N	-0.834472522	0.275940405
CONDUCT	-0.772291472	-0.422303987
HARD	-0.152242322	-0.741862616
CU	-0.861567483	-0.222697486
FE	-0.734434645	-0.121445884
ZN	-0.830399451	-0.117701327
PB	-0.554925789	-0.633859978
BOD20	-0.668877193	-0.045645961
TOT_SOL	-0.278792483	-0.225833471
TURBID	-0.418989085	-0.425358061
FEC_COLI	-0.337912059	0.683616571
CHL_A	-0.383116581	0.743352658
TDI	-0.378505773	-0.145602851
Expl Var	5.861616867	3.528553041
Prp.Totl	0.344800992	0.207561944

Factor Scores (algae2.sta)

Rotation: Unrotated

Extraction: Principal components

	Factor 1	Factor 2
P-MR	1.03755423	-0.508975435
T-GH	1.152357854	0.676308549
S-TR	-0.76702258	1.893061697
W-NW	0.018645404	0.841737171
W-PR	-1.573028937	-0.258352101
W-WA	0.193749979	-0.398551705
W-GA	-1.148745369	-1.712571585
W-73	-0.720028983	0.330428745
W-BM	1.015308724	-0.850597969
W-RA	0.791209678	-0.012487367

Appendix 5. Pearson Product Moment Correlation matrix for standing crop measurements and macroalgae measurements. Highlighted correlations are significant (* = $p < 0.01$).

	Chl-a	AFDM	% Macroalgae Coverage	Macroalgae Max. Length
Chl-a	1.00			
AFDM	0.83*	1.00		
% Macro Coverage	0.58	0.61	1.00	
Macro Max. Length	0.62	0.49	0.85*	1.00

Appendix 6. Pearson Product Moment Correlation matrix for selected physicochemical and biological variables. Highlighted correlations are significant (* = $p < 0.05$, ** = $p < 0.01$).

	Chl-a	TDI	TRP	Inorg. N	Avg. Diel DO Swing	BOD20	Cond.	% Canopy Coverage	Stream Width
Chl-a	1.00								
TDI	-0.21	1.00							
TRP	0.44	0.29	1.00						
Inorg. N	0.48	0.10	0.95**	1.00					
Avg. Diel DO Sw.	0.47	0.45	0.47	0.24	1.00				
BOD20	0.01	0.72*	0.64*	0.52	0.31	1.00			
Conductivity	0.06	0.14	0.62	0.54	-0.32	0.33	1.00		
% Canopy Coverage	-0.84**	-0.04	-0.63	-0.60	-0.77*	-0.40	0.01	1.00	
Stream Width	-0.04	-0.39	0.10	0.19	-0.79*	-0.10	0.28	0.08	1.00

Eutrophication and trophic state in rivers and streams

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Abstract

Many natural streams are net heterotrophic, so I propose that trophic state be divided into autotrophic and heterotrophic state. This division allows consideration of the influence of external carbon sources as well as nutrients such as nitrogen and phosphorus. Empirical results suggest that phosphorus and nitrogen are the most important nutrients regulating autotrophic state in flowing waters and that benthic algal biomass is positively correlated to gross primary production in streams. Reference (minimally influenced by human activities) nutrient concentrations and correlations of nutrients with algal biomass are used to characterize reference distributions of stream autotrophic state. Only when reference nutrient concentrations are in the upper one third of those expected in the United States, is maximum benthic chlorophyll projected to exceed 100 mg m⁻² (a concentration commonly used to indicate nuisance levels) >30% of the time. Average reference nutrient concentrations lead to sestonic chlorophyll concentrations above those considered typical of eutrophic lakes (>8 mg m⁻³) less than half the time. Preliminary analysis suggests that autotrophic state is variable in small pristine streams because it is influenced by canopy cover (light), but heterotrophic state is less variable because it can be based on allochthonous or autochthonous production. Nitrogen and phosphorus enrichment can influence both heterotrophic and autotrophic state, and these effects could cascade to animal communities. Stoichiometry should be considered because carbon, nitrogen, and phosphorus are all involved in trophic state. The proposed definition of trophic state offers a starting conceptual framework for such considerations.

The evolution of concepts regarding enrichment in streams

In its course from the source to the sea, the progressive eutrophication of a river water by drainage from cultivated and inhabited districts is an almost inevitable natural process.

D. Butler 1947

Although current concerns about stream eutrophication mainly focus on nitrogen (N) and phosphorus (P) enrichment (e.g., Smith 2003), early water quality and nutrient enrichment studies in lotic systems focused on carbon (C) enrichment from untreated sewage. Excessive loading of biochemical oxygen demand (BOD) made rivers completely anoxic downstream of sewage treatment plants. Hynes (1960) considered the physical, biological, and chemical effects of sewage loading to create a general conceptual model on the basis of the research of Butler (1946) and others. The conceptual model of Hynes in part considered the influence of increased organic C on dissolved oxygen (O₂) and subsequently on hypoxia- and anoxia-sensitive animals. He noted that most animals immediately downstream from a sewage outfall disappear under anoxic conditions and that, as O₂ enters the stream via aeration, high densities of pollution-tolerant fauna

could be found. Eventually, as the influence of the sewage diminished downstream, Hynes predicted a return to the clean water animal communities found upstream of the sewage outfall.

Enrichment by N and P were also considered in the Hynes model. He noted a substantial increase in ammonium, phosphate, and nitrate immediately downstream from the sewage outfall that diminished farther downstream. In the anoxic zone, the prevalence of cyanobacteria (*Oscillatoria* and *Phormidium*) and *Euglena*, and further downstream substantial biomass of *Cladophora*, were predicted. A decade later, Hynes (1970) specifically noted that nutrient enrichment could occur in rivers and streams as a direct result of human alteration of land use (in addition to sewage input). He described the amounts of increase in fertilizer use and made preliminary calculations of how much fertilizer might reach rivers and streams. At that time, however, Hynes documented a paucity of studies on the effects of nutrient enrichment alone but predicted that planktonic algae in large rivers would be stimulated.

There has been conceptual progress related to defining trophic state and characterizing lotic eutrophication on several fronts in the last three decades. Omernik (1977) proposed that various regions are expected to have distinct baseline amounts of nutrients related to geology, topography, and land uses. He described areas of the United States that would be expected to have relatively greater concentrations of nutrients in streams, and he defined the concept of nutrient ecoregions. The idea that a reference baseline trophic level occurs naturally in a region forms the basis of many current efforts to regulate stream nutrients. Over the last three decades, numerous research programs were designed to link nutrient enrichment to increases in autotrophic biomass in rivers and streams by methods that included the "clay pot" nutrient-diffusing substrata experiments, experimental

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stream channel enrichment experiments, whole-stream enrichments, and a definition of nuisance amounts of algae (Welch et al. 1988).

At a more fundamental level, there have been few attempts to define the trophic state of lotic ecosystems and provide a comprehensive definition of eutrophication applicable to rivers and streams. Thus, I initially attempt to provide such a definition, and under this framework, I describe how prior research can be viewed given my definition.

Defining trophic state and eutrophication in streams

The definition of trophic state I develop here is designed to include both autotrophic and heterotrophic components; thus, there is a "heterotrophic state" and an "autotrophic state" of a stream or river. Heterotrophic state can be defined as the metabolic activity of the stream (typically measured as average O_2 demand [respiration, R] during dark periods and scaled to 24 h). Autotrophic state is the gross primary production (GPP) during lighted periods (typically measured as production and scaled to 24 h). The delineation of heterotrophic and autotrophic state in flowing waters was pioneered by Odum (1956). I propose that eutrophication in lotic habitats be defined as an increase in a nutritive factor or factors that leads to greater whole-system heterotrophic or autotrophic metabolism.

Heterotrophic state and autotrophic state are not mutually exclusive; a system with substantial autotrophic activity will likely have high heterotrophic activity and certainly have high respiration. This link between autotrophy and respiration can lead to a positive correlation between respiration and GPP (Fig. 1). But, a system with more heterotrophic activity does not necessarily have more autotrophic activity (e.g., the condition obtained with high BOD loading). Thus, GPP: R can indicate the balance between heterotrophic and autotrophic state. Considering both autotrophic and heterotrophic components accounts for enrichment by organic C in addition to N and P, and accounts for the observation that lotic food webs can be based on consumption of autotrophic or heterotrophic organisms.

My proposed definition of lotic trophic state is based on total heterotrophic and autotrophic production and influenced by emerging research on lakes. Although production of lakes has often been linked to planktonic biomass (usually expressed as chlorophyll concentrations), lakes can be net heterotrophic and highly influenced by terrestrial C inputs (e.g., Cole et al. 1994). Thus, solely emphasizing autotrophic biomass might not accurately describe trophic structure in lentic ecosystems. Rivers and streams are likely to be more dominated by heterotrophic processes than lakes given their stronger linkage to terrestrial systems as a source of organic C and the greater likelihood that light is intercepted. In small streams, the riparian canopy often shades the stream bottom, turbidity greatly attenuates light in many large, well-mixed rivers, and in some streams (blackwater streams), dissolved organic C colors the water and retards primary production. In many rivers and streams, much allochthonous organic matter enters seasonally and through storm water runoff. The net production of most streams is negative (i.e., $GPP < R$),

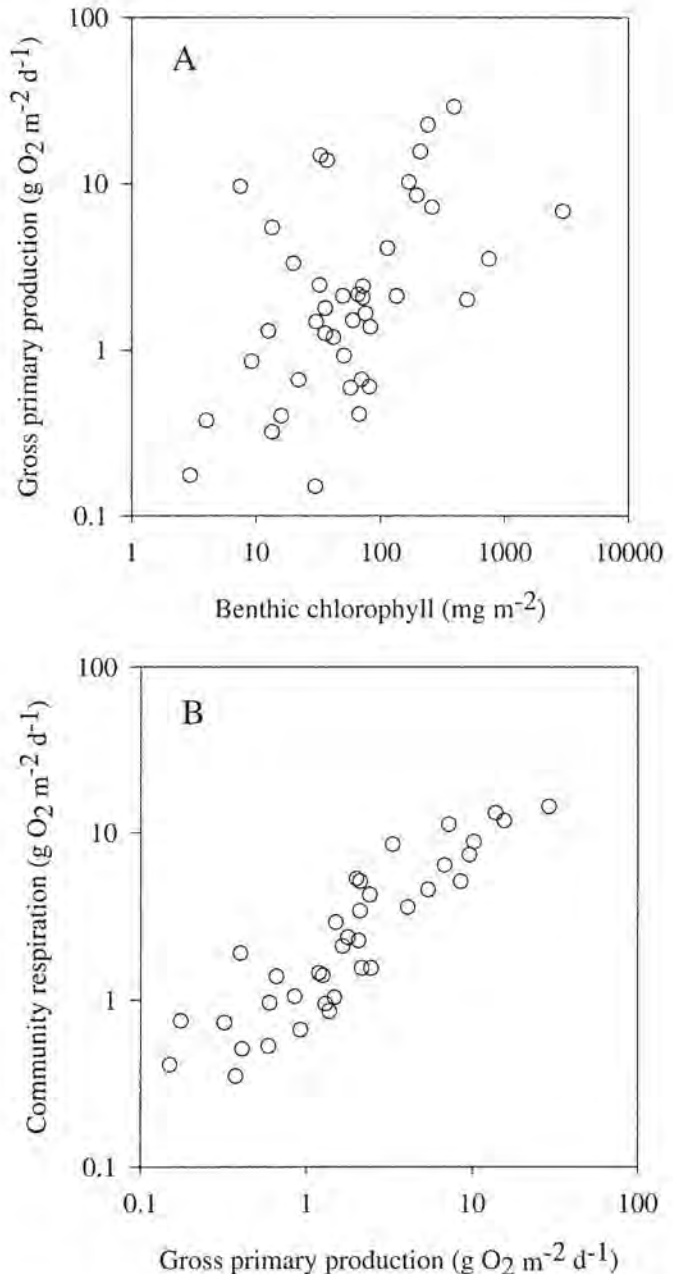


Fig. 1. (A) Relationships between benthic chlorophyll and gross primary production and (B) between gross primary production and community respiration. Data are taken from literature compiled by Bott et al. (1985); ranges were reported for values at one site, and the mean of the minimum and maximum is plotted. The relationship in (A) is significant by linear regression ($p < 0.05$, $r^2 = 0.24$) and in (B) ($p < 0.05$, $r^2 = 0.80$).

even in open-canopy, shallow, clear-water streams (Mulholland et al. 2001). Thus, any definition of eutrophication in streams should consider heterotrophic activity.

Autotrophic activity can also be important in rivers and streams. Some streams with open canopies are net autotrophic (Mulholland et al. 2001). Phytoplankton production can supply a significant portion of the productivity in medium to large rivers that are not highly turbid and do not com-

pletely mix because they have zones with limited water replacement (e.g., Thorp et al. 1998; Wehr and Descy 1998). Thus, allochthonous and autochthonous sources of C both should be considered, as well as inorganic and organic forms of nutrients such as N and P, when defining trophic status of lotic ecosystems.

Historically, trophic state in lakes was defined on the basis of clear delineation between anoxic hypolimnia and oxygenated waters (i.e., the difference between a mesotrophic and a eutrophic lake) and subsequent increases in the prevalence of cyanobacterial blooms, eutrophication-resistant animals, decreased water clarity, and taste and odor problems. Foremost, biogeochemical processes favor increased internal loading of P, leading to a positive feedback that stabilizes the eutrophic state with an anoxic hypolimnion (Dodds 2002). Such clear delineation of eutrophic conditions does not occur in shallow lakes, wetlands, and lotic systems for a variety of reasons.

Rivers and streams are relatively shallow and have considerably greater rates of atmospheric exchange compared with lentic systems, except under very low flow conditions when they become similar to small, shallow lentic systems. Thus, it is difficult for biota to consume all the O₂ in the water column without substantial inputs of BOD and adequate nutrients to support very rapid rates of heterotrophic activity. Anoxia is rare in the water column of natural rivers and streams, even in forested streams under deciduous canopies immediately after leaf fall. In most lotic systems, internal loading of P and N tends to be dominated by remineralization, groundwater inputs, and erosion. Subsequently, alternative methods are required for describing trophic distributions in lotic ecosystems.

An approach that uses statistical distribution of benthic chlorophyll and water column nutrients was proposed to classify trophic state in streams given a lack of breakpoints (Dodds et al. 1998). Trophic categories by statistical distributions signify the probabilities of each trophic state. However, Dodds et al. (1998) used distributions from data sets that included affected sites; thus, the proposed categories do not represent natural trophic distributions. Many regions of developed countries completely lack such reference sites. However, a broad definition of stream trophic state requires consideration of the historical condition of streams before substantial modification that might influence heterotrophic or autotrophic state.

Which nutrients might be expected to control trophic state in lotic systems?

Before I propose trophic categories, it is important to justify which nutrients need to be considered to classify trophic state (i.e., if respiration and production are the response variables, what are the driver variables?). The most influential limnologist in modern times, G. E. Hutchinson (1957), stated "Phosphorus is in many ways the element most important to the ecologist, since it is more likely to be deficient, and therefore to limit the biological productivity of any region of the earth's surface, than are the other major biological elements." This has led to the view that "Excessive con-

centrations of P is [sic] the most common cause of eutrophication in freshwater lakes, reservoirs, streams, and in the headwaters of estuarine systems" (Correll 1999). These assertions are not based on specific experimental and empirical observations of lotic ecosystems. How well do the data support the statement that P is the primary agent of autotrophic eutrophication in rivers and streams?

One of the common methods for assessing nutrient limitation of benthic algae in flowing waters is measuring chlorophyll accumulation on nutrient-diffusing substrata (e.g., Pringle et al. 1986; Winterbourn 1990). Francoeur (2001) performed a meta-analysis of 237 nutrient enrichment studies in temperate streams and found that 16.5% indicated an N response, 18.1% indicated a P response, 23.2% required N and P be added together for a response, 5% had N or P inhibition, and 43% had no response to N or P.

Tank and Dodds (2003) tested for autotrophic nutrient limitation across 10 North American streams with the use of silica (glass fiber filters) or wood (thin layers of wood veneer) substrata in nutrient-diffusing agar devices. Algae responded differently to nutrients, depending on the substrata on which they were growing, and there was no primary positive response of algae to P enrichment alone at any site. No response to nutrient enrichment was a common result of these experiments, but N or N and P stimulated algal biomass at unshaded sites. The lack of nutrient response was closely linked to sites with limited light and a large amount of canopy cover. Tank and Dodds (2003) also presented a literature review that closely mirrored that of Francoeur (2001) in the percent responses to N and N:P treatments.

Few nutrient-releasing substrata experiments have tested for nutrient responses other than N and P. Chessman et al. (1992) tested for trace nutrient concentrations in eight streams during two seasons in Australia. They found no evidence for trace nutrients (Ca, Mg, K, S, Fe, Mn, Co, Cu, Zn, thiamine, biotin, or B₁₂) stimulating algal growth in any stream during any season. The most common response was to N addition alone, with secondary P limitation occurring frequently.

Whole-stream fertilization experiments are rarely conducted under natural conditions, but Stockner and Shortreed (1978) used streamside enrichment troughs in British Columbia and demonstrated a strong P enrichment effect on algal biomass, with a secondary N enrichment effect. Enrichment of the Nechako River in British Columbia indicated N limitation (Perrin and Richardson 1997). Enrichment of a tundra river with P for four consecutive summers first stimulated algal biomass and productivity and eventually stimulated fish production (Peterson et al. 1993).

An alternative, empirical approach for determining the response of algal biomass to nutrients is to establish the statistical relationship between in-stream nutrients and algal biomass. This approach was applied across Missouri streams of varied nutrient enrichment, and positive relationships between water column total N and benthic chlorophyll were found, with a similar relationship between total P and mean benthic chlorophyll (Lohman et al. 1992). Nutrient-enriched sites in this study had more rapid chlorophyll accrual after a scouring flood than nutrient-poor sites. Lohman et al. (1992) speculated that N was more important in these

Table 1. Some studies of flowing waters reporting nitrogen and phosphorus enhancement of heterotrophic activities.

Location	Response variables	Response	Reference
Shaded New Zealand stream	¹⁴ C glucose incorporation, endocellulase activity	N and P stimulated endocellulase activity, but not glucose uptake	Tank and Winterbourn 1996
Small Appalachian streams	Microbial respiration, fungal biomass, extracellular enzyme activity	N and P colimitation	Tank and Webster 1998
Laboratory with stream assemblages	Leaf degradation by bacteria and fungi	N and P stimulated degradation	Gulis and Suberkropp 2002
10 North American streams	Fungal biomass (ergosterol)	2 streams, no effect; 2, P effect; 4, N stimulation; 2, P stimulation	Tank and Dodds 2003
Laboratory experiment	Leaf mass loss	Both N and P effects found	Bürlocher and Corkum 2003
Coastal wetland soil	Bacterial activity	P stimulated bacteria, whereas N stimulated macrophytes	Sundareshwar et al. 2003
Laboratory experiments on plankton from blackwater streams of North Carolina	Bacterial counts	Both N and P stimulated bacteria	Mallin et al. 2004
Carolina streams	Fungal biomass (ergosterol)	High N- and P-sites had greater ergosterol accumulation	Padgett et al. 2000

streams than P. Similar relationships were subsequently established for 13 rivers in southern Ontario (Chapra et al. 1999).

A cross-system analysis of temperate streams established that total N and total P in the water column were significantly related to benthic algal biomass (Dodds et al. 1997). This relationship is relevant to trophic state because production is positively correlated with algal biomass (Fig. 1). Subsequent analysis of an expanded data set suggested that mean and maximum algal biomass were significantly correlated with total N and, to a lesser extent, with total P in the water column and that the best predictive model for algal biomass included both N and P. This analysis also suggested that in excess of a threshold value of total N and total P, there are no increases in mean benthic chlorophyll, thus indicating that nutrient limitation is overcome when water column nutrient concentrations are great enough (Dodds et al. 2002).

Positive correlations also exist between planktonic chlorophyll and water column nutrients in lotic systems. An analysis of suspended chlorophyll in temperate rivers and streams showed a positive relationship between water column total P and suspended chlorophyll (Van Nieuwenhuysse and Jones 1996), with an apparent decrease in planktonic chlorophyll yield per unit P when total P was in excess of approximately 300 mg m⁻³. These authors did not consider total N, so the relative importance of N and P could not be assessed from their data. However, Basu and Pick (1996) studied 31 Canadian Shield rivers and found positive correlations of sestonic chlorophyll with total N in addition to total P, but did not demonstrate any decrease in chlorophyll yield at high nutrient concentrations.

Nutrient enrichment experiments on heterotrophic activity are less numerous. However, the existing laboratory and field experiments suggest that nutrients can limit heterotrophic activity (N, P, or both can be important, Table 1). A survey of stream metabolism across eight streams from various North American biomes indicated that soluble reactive P concen-

trations were positively correlated with both GPP and respiration (Mulholland et al. 2001).

The forms that N and P are in might not be extremely important determinants of heterotrophic or autotrophic state. Algae can use organic N as a primary N source (Antia et al. 1991). In addition, heterotrophic bacteria can be strong competitors for dissolved inorganic nutrients as well as nutrients in dissolved organic compounds (Dodds 2002).

Both N and P (in organic and inorganic forms) could be important determinants of autotrophic and heterotrophic activity in rivers and streams. This is borne out by manipulative experimental approaches and empirical analyses. There is little experimental support for minor nutrients stimulating heterotrophic or autotrophic microbial activity. As discussed in the introductory section, it is clear that C additions will have a strong influence on system heterotrophic activity (O₂ consumption). It is probably unwise to assume a priori that P is the limiting nutrient of the autotrophic state in any particular stream.

Determining boundaries of trophic state

Data presented in the previous section suggest that water column N and P should be considered when characterizing the autotrophic state of rivers and streams and perhaps when determining heterotrophic state. The relative trophic state should be based on the frequency distribution of relatively pristine lotic waters because anthropogenic inputs change over time, as will trophic boundaries. Whereas Dodds et al. (1998) considered total N, total P, and benthic chlorophyll across a wide variety of streams, they did not account for streams that are naturally heterotrophic and did not attempt to use only reference streams to create an expected distribution in the absence of anthropogenic effects.

Reference nutrient data can be used to establish rough limits on the autotrophic state of streams with regard to nutrients; I present one possible approach. Reference nutrient

Table 2. Lower one-third and upper one-third of the distribution of stream total N and total P pooled across 14 ecoregions according to reference values determined for each individual ecoregion by Smith et al. (2003), 13 ecoregions for total P, and 12 ecoregions for total N from Dodds and Oakes (2004) and the relationship of the boundary numbers from Smith et al. (2003) data to cumulative frequency distribution of benthic chlorophyll (Chl) as a function of total N or total P (Fig. 1) expressed as the percentage of benthic chlorophyll mean or maximum values exceeding 100 mg m⁻² when nutrient values were less than the boundary value. For example, when seasonal mean of total N was 714 mg m⁻², then 10% of the streams had mean benthic chlorophyll values exceeding 100 mg m⁻² and 29% had maximum values exceeding that amount.

Nutrient	Autotrophic state boundary	Concentration (mg m ⁻²)		Cases exceeding 100 mg m ⁻² (%)	
		Smith et al. 2003	Dodds and Oakes 2004	Mean Chl	Maximum Chl
Total N	Lower one-third	285	370	7	27
	Upper one-third	714	659	10	29
Total P	Lower one-third	29	23	5	17
	Upper one-third	71	48	13	25

concentrations from modeling, including a correction for atmospheric N deposition, have been proposed for 14 nutrient ecoregions across the United States (Smith et al. 2003). I ranked the median values (one for each ecoregion), and the distribution was divided into the lower, middle, and upper one third (oligotrophic, mesotrophic, and eutrophic, respectively, following limnological convention) of the reference nutrient values (Table 2). The distribution of reference nutrient values roughly agreed with those provided by Dodds and Oakes (2004), who corrected for anthropogenic influences (as represented by human population density and land use characteristics) on stream nutrient concentrations with analysis of covariance across the same ecoregions (Table 2).

There is a positive correlation between autotrophic activity and benthic chlorophyll concentrations in rivers and streams (Fig. 1). Therefore, I initially base autotrophic boundaries on standing stocks of algal biomass, as is the convention in lakes. To accomplish this, the reference nutrient values from Smith et al. 2003 are applied to observed frequency distributions of seasonal mean and maximum benthic chlorophyll, plotted against water column nutrients (Fig. 2). These frequency distributions are used to calculate the probability that a stream will have a given amount of chlorophyll at a specific level of nutrients (Table 2). Relationships derived from those developed by Dodds et al. (2002, corrected for errors Dodds made when entering data from Lohman) also can be used to calculate expected mean and maximum values for benthic chlorophyll on the basis of the nutrient boundaries presented in Table 2 (Table 3).

Benthic chlorophyll values > 100 mg m⁻² previously have been considered a nuisance (Welch et al. 1988). This analysis suggests that a mean value of 100 mg m⁻² of chlorophyll is attained in 7% of oligotrophic streams and in 10±13% of eutrophic systems. The regression analyses also suggest that

oligotrophic systems should exhibit maximum benthic chlorophyll values < 100 mg m⁻² only 27% of the time. Other approaches are possible (e.g., Dodds et al. 1998), but the method presented in this paper considers the dynamic nature of chlorophyll in streams and is reference based.

A similar approach to determining reference trophic state can be taken with regard to planktonic chlorophyll in rivers and streams. A large data set (*n* = 5 292) of lotic planktonic chlorophyll and water column total P was assembled for temperate rivers and streams, and associated regression equations can be used to link nutrients and phytoplankton biomass (Van Nieuwenhuysse and Jones 1996). A smaller data set from 31 rivers in southern Ontario and western Quebec related total N (mg m⁻²) and total P to planktonic chlorophyll (mg m⁻²; Basu and Pick 1996). This paper presented a regression equation for total P, but regression of their raw data yielded the following relationship.

$$\log_{10}(\text{planktonic chlorophyll})$$

$$5.21247 - 1.0676 \log_{10}(\text{total N}) \quad r^2 = 0.65$$

The distribution of reference values from Smith et al. (2003) can then be used to calculate autotrophic categories from these equations (Table 4). These data agree roughly with both the Van Nieuwenhuysse and Jones (1996) and the Basu and Pick (1996) equations for total P, but the total N boundaries derived from the Basu and Pick chlorophyll=total N relationship were substantially lower than those derived for total P from the same data set. The data suggest that planktonic chlorophyll only exceeds values considered typical of eutrophic lakes (8 mg m⁻²; Dodds 2002) when nutrients are abundant relative to the reference condition. The data also are consistent with the idea that the amount of planktonic chlorophyll per unit total N or total P is less in lotic waters than in lentic waters (Sùballe and Kimmel 1987).

More limited data are available for whole-stream estimates of autotrophic and heterotrophic state, but some idea of the ranges expected for the trophic states can be gleaned from analysis of the results of a cross-system study (Mulholland et al. 2001). Although this study and an additional data point (P. Mulholland pers. comm.) only covers nine streams, it has three important characteristics. First, all the measurements were done the same way at each site with methods likely to give the best results (two-station diel O₂ method, corrected for groundwater influences). Second, all the sites studied but one were relatively pristine small streams, so the data can be used to determine trophic boundaries mostly in the absence of human effects. Third, the streams were located in a variety of biomes, including one desert, one prairie, one tropical, one arid montane, one mesic montane, and four temperate deciduous biomes (Mulholland et al. 2001). Whole-stream autotrophic state varied over 150-fold in this data set (very high rates of GPP were associated with the lighted desert stream), with the central one third of the distribution falling between 0.4 and 1.8 g O₂ m⁻² d⁻¹ (Table 5). Heterotrophic state was considerably less variable, ranging about 10-fold with the central one third of the distribution falling between 6.7 and 8.3 g O₂ m⁻² d⁻¹ (Table 5).

Bott et al. (1985) reviewed studies of 70 streams with

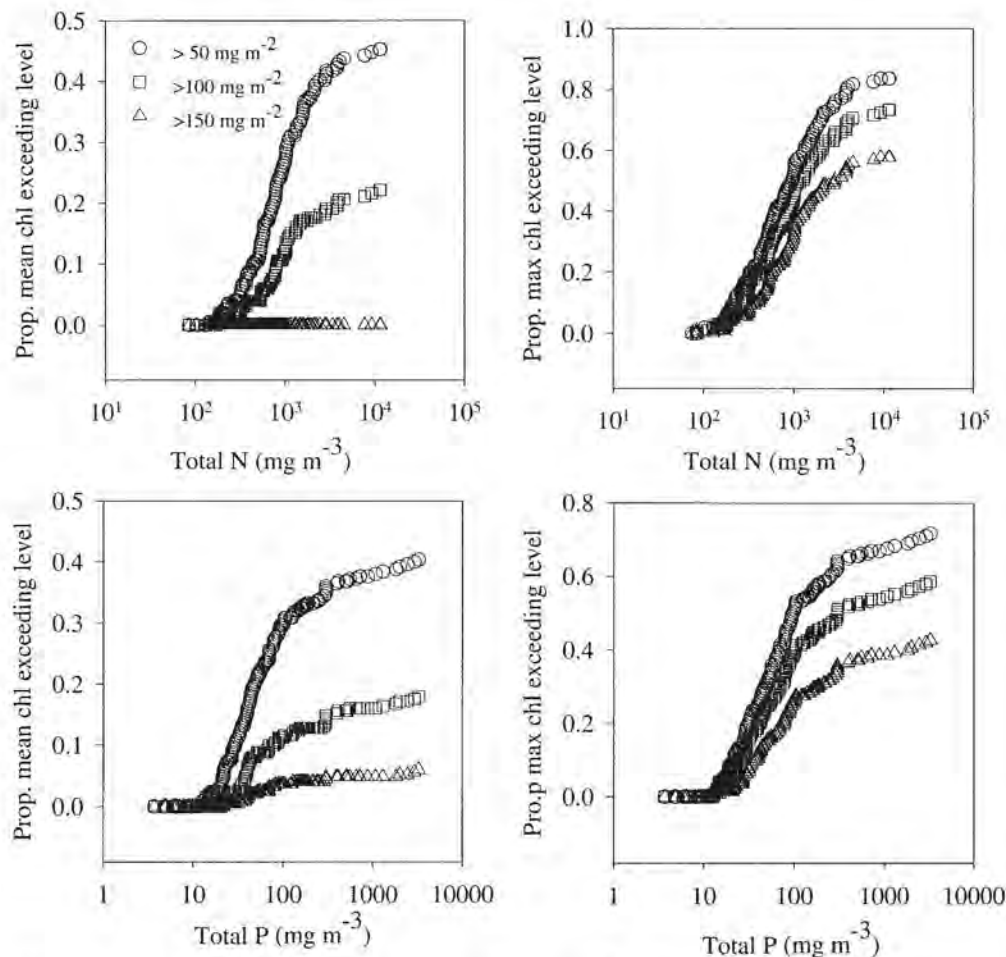


Fig. 2. Relationships between seasonal mean water column nutrients (total N and total P) and proportion of instances in which seasonal mean and maximum chlorophyll exceed 50, 100, or 150 mg m^{-3} . Data are from literature sources compiled in Dodds et al. (2002), mostly for shallow rivers and streams. This compilation previously had incorrect values for data reported by Lohman et al. (1992). Those values now match the original source. $n = 250$ for total P and $n = 199$ for total N.

maximum rates of 48 and 50 $\text{g O}_2 \text{ m}^{-2} \text{ d}^{-1}$ for GPP and respiration, respectively. These rates were from streams with human effects and were several-fold higher than the maximum from more pristine streams. This indicates that both autotrophic state and heterotrophic state can be influenced by eutrophication. Maximum rates of GPP are probably lim-

ited by light under nutrient-replete conditions, whereas respiration is probably limited by O_2 aeration rate in streams with high loading of biochemical oxygen demand.

I speculate that light limits autotrophic state of streams (interception by the canopy), but not heterotrophic state, because although light is intercepted by riparian vegetation, it

Table 3. Corrected regression equations for data presented in Dodds et al. (2002) and expected autotrophic state mean and maximum benthic chlorophyll (Chl) values calculated from nutrient concentrations in Table 1 with these equations. Equations are of the form $\log_{10}(\text{mg chlorophyll m}^{-2}) = \text{Intercept} + B_1 \log_{10}(\text{mg m}^{-3} \text{ total N or total P}) + B_2 [\log_{10}(\text{mg m}^{-3} \text{ total N or total P})]^2$.

Relationship	Intercept	B_1	B_2	R^2	Expected chlorophyll (mg m^{-2})	
					Lower \bar{A}	Upper \bar{A}
Mean Chl versus total N	22.638	2.460	20.320	0.401	30	60
Maximum Chl versus total N	0.438	0.613		0.295	88	154
Mean Chl versus total P	20.608	1.486	20.255	0.402	36	65
Maximum Chl versus total P	0.216	1.680	20.297	0.371	109	204

Table 4. Autotrophic state boundaries for suspended chlorophyll in temperate rivers and streams as calculated from the reference nutrient concentrations from Smith et al. (2003) and regression equations based on Van Nieuwenhuysse and Jones (1996) and Basu and Pick (1996).

Nutrient	Autotrophic state boundary	Nutrient conc. (mg m ⁻³)	Planktonic chlorophyll (mg m ⁻³)	
			Van Nieuwenhuysse and Jones (1996)	Basu and Pick (1996)
Total N	Lower one-third	285		2.4
	Upper one-third	714		4.5
Total P	Lower one-third	29	4.6	6.4
	Upper one-third	71	11.9	12.3

does not substantially influence rates of C input. I predict that the amount of C fixed by the riparian canopy that enters the streams to fuel heterotrophic activity is approximately equal to what would enter by autochthonous production in a lighted stream without canopy cover.

Small streams in forested biomes are shaded, have substantial amounts of organic C input from nearby riparian areas fueling heterotrophic activity, and have minimal autotrophic production (except in deciduous seasonal forests in which light can penetrate the canopy when leaves are not present). Prairie, tundra, or desert streams have limited riparian canopy and substantial autotrophic production fueling heterotrophic activity. An independent measure of total metabolic activity, N uptake rates, also varied little across the range of biomes studied by Mulholland et al. (2001), supporting the concept of relatively constant heterotrophic activity in small pristine streams (Webster et al. 2003). Heterotrophic state might be more variable in rivers; canopy has less of an influence, and turbidity could substantially interfere with riverine C production.

Although the approach taken here might provide useful in setting boundaries for autotrophic and heterotrophic state, more comprehensive measurements of stream metabolism are required. Until such comprehensive measurements are made, the values for boundaries presented here should be used with caution. In addition, whole-river metabolism rates are difficult to measure, and data are difficult to come by for such rivers. Very few large rivers remain in temperate regions that are relatively weakly influenced by humans, so it might not be possible to set definitive autotrophic and heterotrophic state boundaries for larger lotic systems in some regions.

Although determining trophic boundaries could be useful in describing fundamental ecosystem processes, changes in trophic state must be linked to other aspects of stream ecosystems for such boundaries to be relevant. Furthermore, it is important to explore how stream eutrophication is propagated through the food web to influence biotic integrity and community structure.

Effects of eutrophication

Producers Stevenson and Pan (1999) reviewed the uses of diatoms for assessing environmental conditions in rivers

Table 5. Distribution of whole-stream metabolism rates from nine small, relatively pristine streams (data from Mulholland et al. [2001] plus one point from Ball Creek, North Carolina [Mulholland pers. comm.]). Respiration rates are corrected for groundwater input.

Distribution	Metabolism (g O ₂ m ⁻² d ⁻¹)		
	Gross primary production	Respiration	Net primary production
Upper one-third	1.8	8.3	24.2
Lower one-third	0.4	6.7	26.7
Minimum	0.06	2.4	2.29
Maximum	15	29	6.7

and streams. They traced the use of species compositions of algae to infer amount of pollution to work by Kolkwitz and Marsson in the early 1900s, with substantial contributions by Ruth Patrick in the 1940s and 1950s (as cited by Stevenson and Pan 1999). Studies that use algal assemblages as indicators of the extent of pollution rely on the concept that predictable species shifts occur with set amounts of enrichment (e.g., Kelly 2002). Detailed work has been carried out relating nutrients to diatom and other algal assemblages in several places, mostly in temperate, developed countries.

The green alga *Cladophora* has often been associated with eutrophication events (Hynes 1960) and is ubiquitous in nutrient-rich flowing waters (Dodds and Gudder 1992). Large streamers of *Cladophora* develop under nutrient-rich conditions. These streamers potentially lead to low O₂ events at night, alter the community structure, snag fish lures, slow water flow in canals, and clog industrial and domestic water intakes (Dodds and Gudder 1992).

One of the problems with predicting eutrophication effects in streams is that variability caused by flooding can influence autotrophic state. At one extreme, algal biomass might not accrue with ample light and nutrients if floods always scour biomass. On the other end of the spectrum, attached algae might be able to attain impressive biomass in nutrient-poor water because periphyton can use the small amounts of nutrients that continuously flow by. Biggs (2000) developed a comprehensive model linking hydrologic regime and nutrients to accrual of algal biomass. This model was developed with a database from New Zealand rivers and streams across a wide range of land use practices and hydrologic patterns. Regressions considering only dissolved inorganic nutrients could predict algal biomass with *r*² values of approximately 30%. Consideration of the time of accrual (time since the last scouring flood) increased *r*² values to about 70%. The work of Biggs (2000) supports the proposition that eutrophication effects will be stronger under stable flow regimes.

The effects of eutrophication on macrophytes in flowing waters have been poorly studied, and the effects of nutrient reductions on macrophyte biomass are difficult to predict (Chambers et al. 1999). Biomass of macrophytes declined in the Bow River (Alberta) in response to nutrient control (particularly N) from municipal wastewater sources (Sosiak 2002). Sewage effluent led to substantially greater macrophyte biomass in the Saskatchewan River (Saskatchewan),

and this was correlated with somewhat decreased dissolved O_2 concentration (Chambers and Prepas 1994).

In some rivers and streams with reduced water replacement times, phytoplankton blooms can become problematic, with cyanobacterial blooms more likely in excess-nutrient conditions (Smith 2003). Shorter water turnover time (hydraulic residence time) leads to a decreased amount of suspended chlorophyll per unit concentration of P (Suballe and Kimmel 1987). Problems occur with phytoplankton blooms in European and other rivers around the world (Wehr and Descy 1998). In the Murray Darling river system in South Australia, water withdrawals reduce flow to a near standstill in the river, and excess amounts of nutrients, stratification, and warm temperature stimulate algal blooms (Maier et al. 2001). These blooms are commonly dominated by the hepatotoxic *Microcystis*. Other slow-flowing rivers in the world suffer a similar fate, particularly those with limited quantities of light-intercepting fine sediments.

Microbial heterotrophs—Although enrichment experiments have documented that rates of microbial heterotrophic processing of organic materials can be stimulated by nutrients (as previously discussed), less is known about influences on the heterotrophic microbial community. If the primary source of organic C to a stream or river is leaf material, N and P need to be obtained from the water column, and nutrient enrichment will increase C utilization rates. One study documented that nutrient enrichment causes shifts in fungal taxa associated with decomposing leaf litter (Gulis and Suberkropp 2002). Presumably, some bacteria that decompose organic matter are better competitors for organic nutrients than others, leading to shifts in community structure in response to nutrient enrichment. Future studies are likely to document this effect, given the recent expansion of molecular techniques. Clear increases in the rates of heterotrophic microbial biogeochemical cycling (denitrification) related to nutrient enrichment by agricultural practices have been demonstrated (Kemp and Dodds 2002).

Food web effects—Effects of C and, particularly, N and P loading on animals in streams are less clear. The effects of C on the animal community are obvious, with greater rates of organic C loading leading to dominance by pollution-tolerant invertebrates (such as *Tubifex*, *Limnodrilus*, *Chironomus*), decreases in diversity, and increases in raw abundance (Hynes 1960). With the advent of BOD treatment in sewage and industrial effluents in developed nations, less attention has been paid to the effects of BOD loading.

Enrichment effects related to N and P are less well established. Macroinvertebrate assemblage structure has been correlated statistically with P concentration (Miltner and Rankin 1998). Nutrient enrichment can cause increases in invertebrate abundance and alters assemblage structure (Bourassa and Cattaneo 1998). The clearest study to date on the importance of sustained nutrient loading to the food web occurred on the Lawrence River downstream of Montreal, Quebec. This study used the distinctive isotopic signal of ^{15}N to establish that nutrients from the sewage outfall significantly enriched macroinvertebrates and production of both macroinvertebrates and fishes (deBruyn et al. 2003).

The sewage was treated for BOD, but stimulated secondary production over 10-fold in spite of the small amount of N and P that entered the food web in the sewage plume 10 km down from the sewage outfall.

Control of cultural eutrophication—Given the definition of the trophic state proposed, and the potential effects of autotrophic and heterotrophic eutrophication, what considerations are important in controlling eutrophication? Mechanistic methods are only beginning to be established for linking in-stream nutrient concentrations to watershed activities. Empirical methods have prevailed (e.g., Dodds et al. 1997) until recently. Modeling efforts are beginning to refine nutrient concentration and loading estimates for rivers, but there still is some difficulty in linking models created for small streams with larger river systems (e.g., Alexander et al. 2002). Ultimately, linking land use practices, including both point and nonpoint sources of nutrients, to instream nutrient concentrations will be necessary to control cultural eutrophication that influences autotrophic state, and potentially influences heterotrophic state.

Nutrient control is, on one level, simple. Agricultural practices, atmospheric loading, and human sewage outfall increase inorganic and organic nutrients in rivers and streams. Technology is available to decrease that input (but nonpoint sources of nutrients such as atmospheric deposition and runoff from cropland remain difficult to control). Best management practices of cropland include riparian buffer strips, cropland terracing, and the use of only the necessary amounts of fertilizer. Effluent from human sewage and livestock-handling facilities can be treated with existing tertiary treatment methods (e.g., denitrification facilities, P precipitation) to reduce N and P loads to lotic waters. The effective reduction of BOD into the waters of most developed countries exemplifies the technical ability of water treatment engineers and managers to remove potentially harmful pollutants at acceptable costs. The challenge now is to determine what lengths are necessary to control point and nonpoint source pollution, and to what degree the benefits of nutrient control justify the costs. Determining the reference trophic state provides a starting point for cost-benefit and feasibility analyses of eutrophication control schemes.

Nutrient cycles do not occur in isolation, and colimitation of algal and heterotrophic activity is commonly seen in bioassays (Tank and Dodds 2003). We are only beginning to understand the implications of the effects of humans on the stoichiometry of nutrient loading (Turner 2002). Stoichiometric changes could alter algal assemblages and relative rates of material flux (e.g., Woodruff et al. 1999). Changes in stoichiometry could then cascade to higher trophic levels (Frost et al. 2002).

Given the broad definition of eutrophication presented herein, organic C enrichment should be considered, as well as anthropogenic processes causing shifts in the relative heterotrophic and autotrophic states. For example, increased BOD from sewage has definite influences on stream heterotrophic state. In addition, shifts in riparian vegetation, such as loss of riparian forests, might increase the autotrophic state and decrease the heterotrophic state. In systems such as tallgrass prairies, historically dominated by little riparian

vegetation, increases in riparian vegetation could alter the fundamental ecosystem and community structure (Dodds et al. 2004). Finally, organic C enrichment might interact with N and P enrichment. The highest rates of C consumption and the greatest biomass of heterotrophic organisms are expected when loading of N, P, and C are simultaneously high.

Water retention times might alter nutrient stoichiometry and heterotrophic and autotrophic states by influencing deposition and nutrient processing rates. Small and large impoundments that were not historically present are now a ubiquitous feature on many river networks. Such impoundments could also alter the balance between heterotrophic and autotrophic states because many recalcitrant C-rich particulate organic materials can settle in the reservoir, and plankton with relatively low values of C:N and C:P could dominate reservoir tail waters (Whiles and Dodds 2002).

Humans will affect ever more river miles with hydrologic modification, alter the inputs of organic C and its form to lotic waters through alteration of riparian vegetation and input of BOD in sewage from humans and livestock. Increased fertilizer to grow the crops necessary to feed an expanding human population and increases in industrial livestock operations resulting in vast production of animal waste will cause further eutrophication of already affected rivers and streams. These effects will continue to spread into the few relatively pristine watersheds that remain on earth, altering water quality and influencing the biotic integrity of these waters. Understanding the full implications of these effects will require further knowledge of the native trophic state of streams as a baseline. More complete comprehension of how nutrient interactions influence trophic state, and determination of trophic states of medium to large rivers will improve the scientific basis for managing eutrophication of lotic waters.

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The Honorable E. Scott Pruitt
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Subject: SAB Review of Lake Erie Nutrient Load Reduction Models and Targets

Dear Administrator Pruitt:

The enclosed report provides the SAB's consensus advice and recommendations on the development of nutrient-load reduction targets for Lake Erie. At the EPA's request, the SAB has reviewed the modeling approach and results used to develop nutrient-load reduction targets for Lake Erie and provides advice on an adaptive management approach to implementing nutrient reduction goals.

EPA Region 5 is co-leading a binational workgroup established under the Great Lakes Water Quality Agreement to develop phosphorus load-reduction targets, strategies and action plans for Lake Erie. In December 2014, the EPA received early advice from the SAB on a modeling approach to develop the phosphorus-reduction targets. A binational workgroup of scientists (Modeling Subgroup) then used a suite of models to generate a series of load-response curves to simulate the impact of phosphorus loads on eutrophication indicators in Lake Erie. The load-response curves were used by the Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team (Task Team) to identify phosphorus reductions needed to meet indicator thresholds associated with desired ecological conditions. Two documents were submitted to the SAB for review: (1) a report titled *Annex 4 Ensemble Modeling Report (May 2016 Peer Review Draft)* and (2) a report titled *Recommended Phosphorus Loading Targets for Lake Erie, Annex 4 Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee (May 11, 2015)*.

The SAB was asked to respond to six charge questions that focused on: (1) the adequacy of the evaluation of the models used to develop load-response curves; (2) whether the recommended phosphorus load-reduction targets are based on the best available information; (3) whether scientifically sound phosphorus load reductions can be developed to address growth of a nuisance alga, *Cladophora*; (4) whether nitrogen control, in addition to phosphorus, is warranted in Lake Erie; (5) recommended approaches to assess progress in reducing loadings of phosphorus; and (6) recommendations for an adaptive management approach to implement nutrient reduction goals for Lake Erie.

The SAB commends the EPA for its efforts to determine whether the models used to simulate and evaluate the impact of phosphorus loads to Lake Erie meet standards that provide confidence in the accuracy and reliability of results. The models used for the simulations are limited by the data available for calibration and validation, and this affects the ability to rigorously evaluate model quality. The Modeling Subgroup applied and evaluated the suite of models independently, rather than as part of an ensemble approach; some models were accepted for use despite deficiencies relative to model evaluation criteria. The SAB's major comments and recommendations are as follows:

- 1
2 • The models evaluated and used by the Modeling Subgroup are not of equal reliability. Assessment
3 of the response to phosphorus loads could be improved by giving greater weight to the load-
4 response curves generated by the models deemed most reliable. Given the limitations of some of the
5 models evaluated, and the practical limits of funding, the number of models considered should be
6 reduced. It might prove most efficient to choose a single model and to further develop that model
7 using the insights and demonstrated capabilities provided by the other models and the results of
8 ongoing process research and monitoring. Consideration should be given to making Western Lake
9 Erie Ecosystem Model the consensus model for this purpose, with a goal of extending this model to
10 all of Lake Erie.
11
- 12 • The SAB finds that the 40% reduction in total phosphorus load to the Western and Central Basins
13 of Lake Erie recommended by the Task Team will improve Lake Erie water quality and reduce
14 harmful algal blooms. However, even with this reduction, blooms may still occur with some
15 frequency, perhaps even routinely, in Maumee Bay in the Western Basin of Lake Erie. Ultimately,
16 greater load reductions may be necessary to achieve the desired thresholds in the eutrophication-
17 response indicators. Uncertainties in predictions of hypoxia are considerably larger than
18 uncertainties associated with predictions of algal blooms. Continued lake and tributary monitoring
19 and research will be needed to support adaptive management and the models used to simulate load
20 reductions.
21
- 22 • Scientifically sound phosphorus load reduction recommendations to reduce *Cladophora* growth in
23 the Eastern Basin of Lake Erie cannot be developed at this time. The SAB finds that there is
24 insufficient information available to understand and weigh the relative importance of environmental
25 factors that might have causal links to *Cladophora* growth. The Great Lakes *Cladophora* Model can
26 be used to evaluate *Cladophora* occurrence and provide initial predictions of *Cladophora* biomass.
27 However, knowledge gaps must be filled before phosphorus load-reduction recommendations to
28 reduce *Cladophora* growth can be developed with an adequate level of certainty and scientific
29 confidence.
30
- 31 • While phosphorus has always been considered the limiting nutrient for Lake Erie and most other
32 lakes, there is increasing evidence of the possible need for nitrogen control as well. In order to
33 evaluate the importance of nitrogen control in Lake Erie, research should be conducted to answer a
34 number of key questions and understand important relationships. These issues are identified and
35 discussed in the enclosed report.
36
- 37 • Tracking flow-weighted mean concentrations of phosphorus in Lake Erie tributaries, as
38 recommended by the Task Team, is a useful approach for measuring progress in load reduction.
39 This approach accounts for variability in hydrology. However, the SAB recommends that all
40 available monitoring data (discharge, flow, concentrations and loads) from significant tributaries
41 and multiple assessment approaches be reviewed and used to evaluate efforts to reduce nutrient
42 loadings. The SAB also recommends that the uncertainty in values derived using flow-weighted or
43 flow-adjusted assessment approaches be explicitly quantified and presented, and that detailed
44 information on the implementation of phosphorus reduction strategies be collected to help identify
45 the reasons for observed changes in phosphorus loads delivered to Lake Erie.
46

- The SAB strongly endorses development of an adaptive management program to implement and evaluate nutrient reduction goals for Lake Erie and recommends that the EPA formally appoint a standing committee to develop and coordinate the program. The adaptive management program should include long-term monitoring and application of process-based eutrophication models to make annual predictions of eutrophication response indicators. The program should assess empirical data against model results and test alternative hypotheses and conceptual models to help explain discrepancies and use new knowledge to adjust management operations. The results of these assessments and hypothesis and model testing will also guide future monitoring and modeling efforts. In the enclosed report the SAB suggests a number of important research, monitoring, and modeling tasks to provide information needed for nutrient-load reduction and management of harmful algal blooms and hypoxia.

The SAB appreciates the opportunity to provide the EPA with advice on this important subject. We look forward to receiving the agency's response.

Sincerely,

Enclosure

NOTICE

This report has been written as part of the activities of the EPA Science Advisory Board (SAB), a public advisory group providing extramural scientific information and advice to the Administrator and other officials of the Environmental Protection Agency. The SAB is structured to provide balanced, expert assessment of scientific matters related to problems facing the Agency. This report has not been reviewed for approval by the Agency and, hence, the contents of this report do not necessarily represent the views and policies of the Environmental Protection Agency, nor of other agencies in the Executive Branch of the Federal government, nor does mention of trade names of commercial products constitute a recommendation for use. Reports of the SAB are posted on the EPA Web site at <http://www.epa.gov/sab>.

**U.S. Environmental Protection Agency
Science Advisory Board
Lake Erie Phosphorus Objectives Review Panel**

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Acronyms and Abbreviations

NH ₄ ⁺	Ammonium
ANAMMOX	Anaerobic Ammonium Oxidation
BMP	Best Management Practice
CAEDYM	Computational Aquatic Ecosystem Dynamics Model
cm	Centimeter
DIN	Dissolved Inorganic Nitrogen
DOC	Dissolved Organic Carbon
DOP	Dissolved Organic Phosphorus
DNRA	Dissimilatory Nitrate Reduction to Ammonium
EcoLE	Ecological Model of Lake Erie
ELCOM	Estuary, Lake and Coastal Ocean Model
ELCM	Estuary and Lake Computer Model
ERI	Eutrophication Response Indicator
FAC	Flow Adjusted Concentration
FWMC	Flow Weighted Mean Concentration
GLCM	Great Lakes <i>Cladophora</i> Model
GLWQA	Great Lakes Water Quality Agreement
HAB	Harmful Algal Bloom
MT	Metric Ton
m	meter
µg	Microgram
mg/L	Milligrams Per Liter
N	Nitrogen
NO ₂ ⁻	Nitrite
NO ₃ ⁻	Nitrate
P	Phosphorus
POC	Particulate Organic Carbon
ppb	Parts Per Billion
P-Quota	Cellular Phosphorus Concentration
SOD	Sediment Oxygen Demand
SRP	Soluble Reactive Phosphorus
TKN	Total Kjeldahl Nitrogen
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
USDA	U.S. Department of Agriculture
WLEEM	Western Lake Erie Ecosystem Model
WHO	World Health Organization

1. EXECUTIVE SUMMARY

EPA Region 5 is co-leading a binational workgroup to develop and implement the Nutrients Annex (“Annex 4”) of the 2012 Great Lakes Water Quality Agreement (GLWQA). Under Annex 4 the U.S. and Canada committed to address eutrophication issues in Lake Erie by first establishing phosphorus (P) objectives, loading targets and allocations for nearshore and offshore waters and subsequently developing P-reduction strategies and domestic action plans. In December 2014, the EPA received early advice from the SAB on a modeling approach to develop P-reduction targets. A binational workgroup of scientists (The Annex 4 Objectives and Targets Task Team Modeling Subgroup) then used a suite of models to generate a series of load-response curves to simulate the impact of P loads on cyanobacteria biomass, hypoxia and nuisance *Cladophora* growth. These load-response curves were used by the Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team (Task Team) to identify P load reductions needed to produce desired ecological conditions for Lake Erie.

The EPA requested that the SAB review the modeling approach and results used to develop the P load reduction targets for Lake Erie. The SAB was also asked to provide advice on how to periodically evaluate the nutrient reduction targets. The EPA submitted two documents to the SAB for review: (1) a report titled *Annex 4 Ensemble Modeling Report (May 2016 Peer Review Draft)* and (2) a report titled *Recommended Phosphorus Loading Targets for Lake Erie, Annex 4 Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee (May 11, 2015)*. The SAB was asked to respond to six charge questions that focused on: (1) the adequacy of the evaluation of the models used to develop load-response curves; (2) whether the recommended P load reduction targets are based on the best available information on drivers of cyanobacteria growth and seasonal hypoxia in Lake Erie; (3) whether scientifically-sound P load reductions can be developed to address the problem of *Cladophora* growth in Lake Erie; (4) whether nitrogen (N) control, in addition to P, is warranted in Lake Erie to prevent harmful algal blooms and manage hypoxia; (5) how to account for inter-annual variability in hydrology when assessing progress in reducing loadings of P to Lake Erie; and (6) recommendations for an adaptive management approach to implement nutrient reduction goals for Lake Erie. This executive summary highlights the findings and recommendations of the SAB in response to the charge questions provided in Appendix A.

Evaluation of the Models to Inform Interpretation of Results

The SAB was asked to comment on: (1) whether the evaluation of the models was adequate to inform how model results should be interpreted, and (2) any additional analyses that may be needed to improve future development and interpretation of the load-response curves for the eutrophication response indicators. The Modeling Subgroup applied and evaluated the suite of models independently, rather than as part of an ensemble approach; some models were accepted for use despite deficiencies relative to model evaluation criteria. The SAB recognizes that the models are limited by the data available for calibration and validation and this affects the ability to rigorously evaluate model quality. A better understanding of the limitations of the data and the data requirements needed to produce higher certainty in estimates should be sought. The model evaluations did not attempt to characterize the relative strengths of each model or the consistency of descriptions of underlying key processes. Furthermore, all of the load-response curves were treated as equally likely, despite differences in estimated load and model uncertainty. The SAB finds that the models are not of equal reliability, and the assessment of load-responses would have benefited by giving greater weight to response curves generated by the

models that appear to be most reliable on the basis of the model evaluation. Although the model evaluation included efforts to characterize uncertainty, the approaches used to quantify uncertainty differed among the models. Therefore, assessed uncertainties cannot be compared across models and uncertainties were not used to evaluate the likelihood that loading targets would achieve desired threshold values of the selected ecosystem response.

The number of models considered for use should be reduced. Priority should be given to the process-based models that have the capability to account for the response to load reductions, climate changes and relevant ecological processes such as the internal storage and recycling of nutrients. Given practical limits of funding and the limitations of some of the models evaluated, consideration should be given to further developing one process-based model using the insights and demonstrated capabilities provided by the other models; the Western Lake Erie Ecosystem Model (WLEEM) could be the consensus model for this purpose.

The SAB also recommends that synoptic sampling of key variables be conducted on an ongoing basis to support continued model evaluation and refinement for Lake Erie. It is important to monitor flow, nutrient concentration and total suspended solids in the significant tributaries to Lake Erie at sufficient frequencies to make accurate estimates of loading. Estimates of loading could be further improved by linking land-use models with loading models. If multiple models are used to derive load-response information, consideration should be given to combining model estimates using either likelihood based methods or Bayesian model averaging to produce a weighted quantitative characterization of the loading curve and associated uncertainty.

Phosphorus Loading Targets

In order to meet ecosystem objectives¹, the Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team (Task Team) recommended a 40% reduction in the total P load to the Central and Western Basins of Lake Erie. The SAB was asked to comment on whether the recommended loading target reflects the best available information on the key drivers of cyanobacteria growth in the Western Basin, and the potential link with seasonal hypoxia in the Central Basin. Based upon coupling of the suite of models to the relatively long term observational record, the SAB finds a 40% reduction in total P load will improve water quality and reduce the magnitude and extent of harmful algal blooms in keeping with the stated goals in the Task Team report. In addition, the SAB recognizes that the focus of abatement programs should be on reducing those nutrient components that readily support growth of phytoplankton communities. This implies that a focus should be placed on reduction of soluble reactive P (SRP), which is generally regarded as completely bioavailable, as well as those fractions of total P (TP) that may be partially available to phytoplankton (e.g., certain particulate P and dissolved organic P (DOP) fractions. However, even with this reduction, blooms may still occur with some frequency, perhaps even routinely, in Maumee Bay in the Western Basin of Lake Erie. Ultimately, further load reductions may be necessary to achieve the desired thresholds of the eutrophication response indicators. Uncertainties in predictions of hypoxia are considerably larger than uncertainties associated with predictions of algal blooms; the link between algal blooms and hypoxia in the Western Basin is not well understood. A current weakness of the hypoxia evaluation is that multiple year runs of the process

¹ The desired thresholds identified for eutrophication response indicators in Lake Erie were: (1) Western Basin cyanobacteria bloom biomass no less than that observed in 2004 or 2012, nine years out of ten, and/or reduced risk of nearshore localized blooms; and (2) Central Basin hypoxia August – September average hypolimnetic dissolved oxygen concentration of 2.0 mg/L or more (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015).

models have not been conducted. Therefore, the development of a forwarded residual of P or organic matter over time has not been simulated.

As previously indicated, continued lake and tributary monitoring will be needed to support further development of the modeling and adaptive management programs. Additional information (e.g., resuspension fluxes and sediment-water interactions, changes in the response of algal species to P over time, N limitation information) will be needed in order to incorporate currently missing components in the models. These components include: temporal variability in hydrodynamics; factors affecting P uptake by algae; the role of N in mediating algal growth; controls of algal toxin production; internal P loading; the role of dreissenid mussels; seasonality in the timing of nutrient loads; winter-spring diatom blooms under ice; and the effects of climate change.

Development of Recommendations to Address Nuisance Levels of *Cladophora* Growth

The SAB was asked to comment on whether scientifically sound P-load reduction recommendations could be developed to reduce nuisance *Cladophora* growth in the Eastern Basin of Lake Erie. *Cladophora* is a green alga that grows attached to hard benthic substrates. The nuisance attribute of *Cladophora* is that expansive growths of this alga can cover large nearshore regions leading to the formation of “beach muck” and problems that arise from it. The SAB finds that recommendations to reduce the P loadings to control *Cladophora* growth cannot be developed at this time. There is insufficient information available to understand and weigh the relative importance of environmental factors (including P inputs) that might cause *Cladophora* growth and senescence. There are limited observations of the spatial extent of the *Cladophora* problem along the shore of the Eastern Basin of Lake Erie. However, available information does point to a developing basin-wide problem of significant magnitude that warrants immediate action.

The Great Lakes *Cladophora* Model (GLCM) provides a first-order evaluation of *Cladophora* occurrence and initial predictions regarding the reduction of *Cladophora* biomass. However, knowledge gaps must be filled before P-load reduction recommendations to control *Cladophora* growth can be developed with an adequate level of certainty and scientific confidence. These knowledge gaps include the needs to: calibrate the GLCM for use in the Eastern Basin of Lake Erie, understand the importance of P loads from different tributaries and the effect of local hydrodynamics on *Cladophora* growth, understand processes that lead to sloughing of *Cladophora* and its decay to “beach muck,” and include the GLCM in a broader whole lake model to forecast the likelihood of *Cladophora* growth. The GLCM would be more useful if it could be further developed to understand the growth of other nuisance benthic algae (e.g., *Chara*, *Lyngbya*, and *Spirogyra*) that cause problems similar to those associated with *Cladophora*. It is particularly important to link the data needs of the GLCM with the data collection process. The EPA should evaluate what data are needed to reduce uncertainty in the model and better predict algal growth and presence.

Determination of Whether Nitrogen Control is Warranted

The SAB was asked to provide recommendations to help determine whether consideration of N control, in addition to P, is warranted to reduce eutrophication in Lake Erie. In particular, the SAB was asked to identify questions, relationships, and research priorities related to N loading and cycling that must be addressed. As further discussed in this report, there is increasing evidence that N control, as well as P control, may be needed to reduce eutrophication in Lake Erie. The toxic cyanobacterium, *Microcystis*,

the major concern in western Lake Erie, does not fix N and therefore requires a fixed N source. *Microcystis* becomes more toxic when nitrate is abundant in lake water, but it can become N-limited in western Lake Erie in late summer. Furthermore, the growth of nuisance benthic algae in the Lake is fueled by loading of both N and P.

In order to evaluate the importance of N control in Lake Erie, future research should answer some key questions and clarify important relationships. Key research questions include: (1) What are the total N loadings entering Lake Erie over time and space (including all of the major species of N)? (2) What is the N budget for Lake Erie? (3) How much external N loading can be removed by internal processes like denitrification, ammonia volatilization and burial, and transformed by dissimilatory nitrate reduction to ammonium (DNRA)?² (4) What are the consequences of legacy N and P in the sediments and the differences in internal P and N cycling? (5) What are the downstream consequences of not following a dual nutrient strategy? (6) What is the importance of concentrations and ratios of N to other nutrients in directing or controlling ecosystem functions? (7) What is the ratio of N to P that would be best for ecosystem functioning? (8) How reliable are current models for assessing the role of N in Lake Erie eutrophication and how can the models be improved to model the effects of N? In addition, the SAB recommends that best management practices (BMPs) be developed or applied to achieve N reduction in Lake Erie, and “lessons-learned” case studies of nutrient reduction strategies for the Baltic Sea, Gulf of Mexico, and other areas be applied to Lake Erie. Agricultural BMPs for P may help to control N but may not be sufficient to attain the degree of N control that could be necessary.

Assessing Progress in Reducing Tributary Loadings of Phosphorus

The SAB was asked to comment on the use of flow-weighted mean concentrations (FWMC) and other approaches that should be considered to account for inter-annual variability in hydrology when assessing progress in reducing tributary loadings of P to Lake Erie. The FWMC is the preferred approach for calculating average concentrations in tributaries with variable flows. To determine FWMC, the concentration in each sample is weighted by both the accompanying time interval and the flow. The Task Team has recommended using FWMCs of P in Lake Erie tributaries as a benchmark to track progress in load reduction. A flow-weighted mean concentration normalizes loadings with respect to flow so that year-to-year progress in nutrient control is not confounded by variability in inter-annual hydrology. This is a useful approach but the SAB recommends that all available monitoring data (discharge, flow, concentrations and loads) from significant tributaries and multiple assessment approaches (including FWMC and flow adjusted concentrations) be reviewed and used to evaluate controls on nutrient loadings. FWMC analysis alone may mask elevated concentrations of nutrients that can result in algal blooms. Nutrient concentration (affected by nutrient loading) controls organism responses, and the effect of temporal variability in nutrient concentration is an important consideration in the management of harmful algal blooms, particularly for organisms that have rapid life cycles and a rapid response to shifts in nutrient concentrations. The SAB notes that flow adjusted concentrations (relating nutrient concentration to discharge flow) have been used to remove seasonality from tributary monitoring data and more clearly identify annual trends.

The SAB recommends that the uncertainty in values derived using flow-weighted or flow-adjusted assessment approaches be explicitly quantified and presented, and that detailed information on the implementation of P reduction strategies be collected. Without this information, it will not be possible to

² DNRA is dissimilatory nitrate reduction to ammonium, NO_3^- to NH_4^+ . It is a transformation (not a removal) process

1 identify the primary reasons for observed changes in P loads delivered to the Lake. If control of nutrients
2 other than P (e.g., N, silica, or other micronutrients) is considered, the SAB recommends that the same
3 assessment approaches be applied to tributary monitoring for those nutrients in order to evaluate efforts
4 to control sources of loadings.

6 **Adaptive Management Program**

8 The SAB was asked to comment on the key elements that should be included in an adaptive
9 management program to implement and evaluate nutrient reduction goals for Lake Erie. The SAB was
10 also asked to comment on the value of using existing eutrophication models to periodically evaluate P
11 loading targets and key response indicators. The SAB strongly endorses development of an adaptive
12 management program to implement and evaluate nutrient reduction goals for Lake Erie and recommends
13 that the EPA formally appoint a standing committee to develop and coordinate adaptive management.
14 The program should test alternative hypotheses and associated conceptual models that can be used to
15 adjust management operations and guide future monitoring and modeling. It is beyond the scope of this
16 report to develop a comprehensive list of alternative hypotheses for Lake Erie eutrophication. However,
17 the SAB suggests a number of research, monitoring and modeling tasks that focus on nutrient-load
18 reduction, control of cyanobacteria and *Cladophora* blooms and evaluating processes that influence
19 hypolimnetic dissolved oxygen.

21 The adaptive management program should include long-term monitoring to assess whether loading and
22 eutrophication response targets are being met. Long-term monitoring should involve: assessing P and N
23 loading information and developing standardized protocols for loading estimates; maintaining and
24 expanding current tributary monitoring; considering the potential for monitoring additional
25 eutrophication response indicators; and collecting appropriate data to calibrate and validate models. The
26 adaptive management committee should be tasked with evaluating alternative management strategies for
27 Lake Erie eutrophication and evaluating future scenarios.

29 The SAB recommends that process-based eutrophication models be used as part of the adaptive
30 management process (as previously indicated, consideration should be given to developing one process-
31 based model). These models can be used to make annual predictions of eutrophication response
32 indicators and to test alternative hypotheses. The SAB recommends that: the models be refined based on
33 changing loadings and other new data; future scenarios be evaluated to understand the effects of climate
34 variability, estimates of uncertainty be improved in the models; lake models be linked to upstream
35 source functions through watershed modeling; and that cases where models do not perform well be used
36 to develop alternative hypotheses.

2. INTRODUCTION

EPA Region 5 is co-leading a binational workgroup to develop and implement the Nutrients Annex (“Annex 4”) of the 2012 Great Lakes Water Quality Agreement (GLWQA). Under Annex 4 the U.S. and Canada committed to address eutrophication issues in Lake Erie by first establishing phosphorus (P) objectives, loading targets and allocations for nearshore and offshore waters and subsequently developing P reduction strategies and domestic action plans. In December 2014, the EPA received early advice from the SAB on a modeling approach to develop P reduction targets (U.S. EPA Science Advisory Board 2015). A binational workgroup of scientists (The Annex 4 Objectives and Targets Task Team Modeling Subgroup) then used a suite of models to generate a series of load-response curves to simulate the impact of P loads on cyanobacteria biomass, hypoxia and *Cladophora* growth. An ensemble modeling approach was considered for this analysis but the load-response curves were generated by running the models individually. These load-response curves were used by the Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team (Task Team) to identify P reductions needed to meet indicator thresholds that reflected desired ecological conditions for Lake Erie.

The SAB provided early advice to the EPA on the proposed ensemble modeling approach for developing P targets for Lake Erie (U.S. EPA Science Advisory Board 2015). The EPA then requested that the SAB review the modeling results and process used to develop P load reduction targets for the Lake. In addition, the EPA requested advice on an adaptive management approach to periodically evaluate the nutrient reduction targets. The agency submitted two documents to the SAB for review: (1) a report titled *Annex 4 Ensemble Modeling Report (May 2016 Peer Review Draft)*, and (2) a report titled *Recommended Phosphorus Loading Targets for Lake Erie, Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee (May 11, 2015)*.

The SAB was asked to respond to six charge questions that focused on: (1) the adequacy of the evaluation of the models used to develop load-response curves; (2) whether the recommended P load reduction targets are based on the best available information on drivers of cyanobacteria growth and seasonal hypoxia in Lake Erie; (3) whether scientifically-sound P load reductions can be developed to address the problem of *Cladophora* growth in Lake Erie; (4) whether nitrogen (N) control, in addition to P, is warranted in Lake Erie to prevent harmful algal blooms and manage hypoxia; (5) approaches to account for inter-annual variability in hydrology when assessing progress in reducing loadings of P to Lake Erie; and (6) an adaptive management approach to implement nutrient reduction goals for Lake Erie. In response to the EPA’s request the SAB convened its Lake Erie Phosphorus Objectives Review Panel to conduct the review. The Panel held a public meeting on June 21-22, 2016 and teleconference meetings on October 12 and 13, 2016 to deliberate on responses to the charge questions and develop a consensus report of its findings and recommendations. The Panel’s draft report was reviewed and discussed by the chartered SAB at a teleconference on <<insert date>>. This SAB report provides the findings and recommendations of the SAB in response to the EPA charge questions (Appendix A). Key recommendations are highlighted at the end of each section of the report. The key recommendations are grouped to provide a relative indication of whether it may be most appropriate to implement them in the short, intermediate, or long term. This listing is intended to offer suggestions that may be helpful to the EPA in deciding how and when to allocate resources to support this work.

3. RESPONSES TO EPA'S CHARGE QUESTIONS

3.1. Approach for Developing Lake Erie Phosphorus Load Reduction Targets

The Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team Modeling Subgroup (Modeling Subgroup) evaluated nine models to predict the response of selected eutrophication response indicators (ERIs) to different P load scenarios. Four response indicators were considered and evaluated: (1) overall phytoplankton biomass, as represented by chlorophyll a; (2) cyanobacteria blooms in the Western Basin; (3) hypoxia in the hypolimnion in the Central Basin; and (4) *Cladophora* in the nearshore areas of the Eastern Basin.

The document, *Ensemble Modeling Report (May 2016 Peer Review Draft)* (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team Modeling Subgroup 2016) describes evaluation of the models and development of load-response curves for the selected ecosystem response indicators (ERIs) for Lake Erie. These load-response curves were used to develop P reduction targets to meet thresholds of desired ecological conditions for Lake Erie (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015). The SAB was asked to comment on: whether the evaluation of the models by the Modeling Subgroup was adequate to inform interpretation of model results; whether additional analyses were needed to improve development and interpretation of load-response curves; whether the recommended targets reflect the best information on the drivers of cyanobacteria growth and seasonal hypoxia; and whether the recommended targets are appropriate to meet the nutrient objectives defined in the Great Lakes Water Quality Agreement.

3.1.1. Evaluation of the Models to Inform Interpretation of Results

Charge Question 1. Please comment on whether the evaluation of the models was adequate to inform how model results should be interpreted, given differences in model complexity and scale. Please identify any additional analyses that may be needed to improve future development and interpretation of the load-response curves for the eutrophication response indicators.

The SAB broke the response to this charge question into two sub-questions:

1. Was the evaluation of the models adequate to inform how the model results should be interpreted?
2. What additional analyses may be needed to improve future development and interpretation of the load-response curves?

Model Evaluations

The original approach for developing Lake Erie P load reduction targets, as described by the EPA in a 2014 consultation with the SAB (U.S. EPA Science Advisory Board 2015), was to estimate load-response curves from multiple models and combine these into a single model or ensemble estimate. However, the models were applied and evaluated independently and were not used to develop an ensemble estimate. The independent model evaluations were intended to ensure that the results of each model met standards that would provide confidence that the model-generated load-response curves

could be regarded as reasonably accurate and reliable. While adequate in concept, the criteria¹ used for the model evaluations were only loosely applied and models were accepted despite deficiencies relative to the criteria. For example, the Estuary, Lake and Coastal Ocean Model (ELCOM) was accepted and used to develop a load-response curve for Lake Erie Central Basin hypoxia despite having not been calibrated to Central Basin dissolved oxygen. A sensitivity analysis was not performed for the ELCOM. The Modeling Subgroup's use of a common set of metrics to evaluate model fit is admirable; however, these metrics were not uniformly applied across the suite of models. In addition, if prediction is a goal of management, the evaluation should have included a predictive measure of fit. The standard measures of goodness of model fit are not predictive,² and Modeling Subgroup assessments of the quality of the fit may be optimistic for purposes of nutrient management.

The model evaluations had other limitations: these evaluations did not characterize the relative strengths of each model or the consistency of descriptions of underlying key processes; and the suite of load-response curves were treated as equally likely, despite significant differences in estimated load and uncertainty. The SAB finds that the assessed models are not of equal reliability and that the assessment of load-responses would have benefited by giving greater weight to response curves generated by the models deemed most reliable.

The overall model evaluation included efforts to characterize model uncertainty. The approaches used to quantify model uncertainty differed among the models and, as a result, the assessed uncertainties cannot be readily compared across models. Perhaps most importantly, the model uncertainties were not used to evaluate the likelihood that the chosen loading targets would achieve the desired thresholds of ecosystem response. While it is clear that meeting the loading targets would lead to improved values of the selected ecosystem response indicators, other important outcomes are less clear. These include the likelihood that the desired threshold levels would be achieved; how long it would take for improvements to occur after the loading is reduced; and the effect of variations in hydro-meteorological forcing and timing of loading on responses to load reduction.

Improving Future Development of the Load-Response Curves

Given the limitations of a number of the models used in the analysis and the practical limits of funding, the SAB recommends reducing the number of models considered. Priority should be given to the process-based models that can account for the response of key environmental processes to changes driven by load reductions, climate changes and internal storage and recycling of nutrients. This recommendation comes with the recognition that such models should have process descriptions consistent with current technical ability to measure and model those processes. That is, the models should not have process resolution that cannot be parameterized based on measurements. It might prove most efficient to choose a single model and to further develop that model using the insights and demonstrated capabilities provided by the other models and the results of ongoing process research and

¹ The Task Team Modeling Subgroup applied the following criteria to evaluate the models: 1) ability to develop load response curves or provide other output for quantitative understanding of relevant questions; 2) applicability to objectives and metrics of interest; 3) extent and quality of calibration and confirmation; 4) extent of model documentation; and 5) level of uncertainty analysis available.

² Goodness of fit is a measure of how well the model fits the data already used to estimate its parameters; predictive fit is a measure of the model's accuracy in predicting future data.

1 monitoring. Consideration should be given to making Western Lake Erie Ecosystem Model (WLEEM)
2 the consensus model for this purpose, with a goal of extending this model to all of Lake Erie.
3

4 Analyses of the ability of the chosen model(s) to predict responses to changing conditions should be
5 conducted on an ongoing basis. Research and model development work should be funded to improve
6 model accuracy and reliability within the overall nutrient-loadings management and decision-making
7 framework. This continued model evaluation and refinement would facilitate making the model or
8 models useful operational tools as part of an ongoing adaptive management process.
9

10 The models are limited by the data available for calibration and validation, which affect the ability to
11 rigorously evaluate model quality. The EPA should seek a better understanding of the limitations of the
12 data and the data requirements needed to produce higher certainty in estimates. Additional in-lake
13 synoptic sampling of key variables such as vertically averaged cyanobacteria abundance, water column
14 and surface sediment nutrients (e.g., N and P), total suspended solids (TSS), and dreissenid mussel
15 biomass) should be conducted on an ongoing basis to support model evaluations and refinements.
16

17 Measurements of flow, TSS and nutrient concentrations in all the significant tributaries to Lake Erie
18 should be made at sufficient frequency each year to make accurate estimates of loading, particularly
19 during the March to July period. While there is adequate information available on historical loading
20 from major tributaries (e.g., the Detroit River and the Maumee River), there is inadequate information
21 available on small³ tributaries. It would be useful to develop a model of nutrient and TSS loading that
22 includes inputs from small tributaries. This would most likely be a hierarchical or Bayesian hierarchical
23 model that accounts for multiple factors. Additional monitoring might be required for adequate
24 estimation of model parameters and subsequent estimates of nutrient loadings from the small tributaries.
25

26 It seems worthwhile to improve the estimates of loading by linking land use models with loading models
27 to achieve a realistic picture of the landscape-level interactions that are likely to produce in-lake changes
28 (e.g., algal blooms, hypoxia, and *Cladophora* growth). Correspondingly, there might be an opportunity
29 to collaborate with farmers who are practicing precision agriculture in the Lake Erie watershed to better
30 estimate optimal fertilizer application rates as a way to reduce nutrient loading. The EPA should seek
31 opportunities to collaborate with the U.S. Department of Agriculture (USDA) to increase local farmers'
32 use of agricultural technologies aimed at more efficient use of fertilizers and reducing nutrient loadings
33 to Lake Erie.
34

35 If multiple models are retained for use in the analysis, model estimates should be combined using either
36 likelihood-based methods or Bayesian model averaging to produce a combined model-weighted
37 quantitative characterization of the loading curve and associated uncertainty.
38
39

³ For the time period 2011-2013, flows from the Detroit River contributed 94% of the flow into the Western Basin of Lake Erie and flows from the Maumee River contributed 4% of the flow into the Western Basin (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015). Small tributaries do not contribute significantly to the total discharge but they may have high concentrations of phosphorus. Maccoux et al. (2016) have estimated phosphorus loading for Lake Erie tributaries.

Key Recommendations

Short Term:

- Because the models used in the analysis are not of equal reliability, the SAB recommends that the assessment of load-responses be improved by giving greater weight to response curves generated by the models deemed most reliable.
- Given the limitations of some models used in the analysis and the practical limits of funding, the number of models considered should be reduced and priority should be given to the process-based models that have the capability to account for the response of key processes. It might prove most efficient to choose a single model and to further develop that model using the insights and demonstrated capabilities provided by the other models and the results of ongoing process research and monitoring. Consideration should be given to making the Western Lake Erie Ecosystem Model (WLEEM) the consensus model for this purpose, with a goal of extending this model to all of Lake Erie.
- Research and model development work should be funded to improve model accuracy and reliability within the overall nutrient loadings management and decision-making framework.
- The EPA should investigate when and where data collection is needed to best inform the models and reduce model and estimation uncertainty. Additional in-lake synoptic sampling of key variables such as vertically averaged cyanobacteria abundance, water column and surface sediment nutrients (e.g., N, P), TSS and dreissenid mussel biomass should be conducted on an ongoing basis to support model evaluations and refinements.
- Measurements of flow, TSS and nutrient concentrations in all the significant tributaries to Lake Erie should be made at sufficient frequency each year to determine accurate estimates of loading, particularly during the March to July period.
- Estimates of loading should be improved by linking land use models with loading models.

Intermediate Term:

- Analyses of the ability of the chosen model(s) to predict responses to changing conditions should be conducted on an ongoing basis.
- If multiple models are retained for use in the analysis, model estimates should be combined using either likelihood based methods or Bayesian model averaging to produce a combined-model weighted quantitative characterization of the loading curve and associated uncertainty.

Long Term:

- A model of nutrient and TSS loading that includes inputs from small tributaries should be developed.

3.1.2. Phosphorus Loading Targets

Charge Question 2. Please comment on whether the recommended targets reflect the best available information on the drivers of cyanobacteria growth and seasonal hypoxia in Lake Erie and are appropriate to meet the nutrient Lake Ecosystem Objectives defined in the GLWQA (as reflected in Table 1 on page 7 of the document titled Recommended Phosphorus Loading Targets for Lake Erie).

The Annex 4 Objectives and Targets Task Team (Task Team) recommended a target of 40% reduction in the total P (TP) load to the Central and Western Basins of Lake Erie (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015). This is based upon the results from the suite of models that compute load-response relationships between metrics of eutrophication response indicators, namely harmful algal blooms (HABs) and hypoxia, and loads leading to values for those metrics. The principal issues considered by the SAB were: (1) whether this target of a 40% reduction (from a 2008 baseline which is essentially equivalent to the current target load of 11,000 MT) is based on and results from a rigorous analysis and modeling framework (reflecting the drivers of cyanobacterial growth and seasonal hypoxia), and (2) whether such a reduction will meet the Lake Erie Ecosystem objectives⁴.

In general, the SAB finds that, while the models used in the analysis vary in complexity and assessment of uncertainty, and not all incorporate the same level of process dynamics, their congruence provides sufficient confidence in the stated recommended target P load. A 40% reduction represents a major and substantial decrease in P inputs, but is in keeping with reductions deemed necessary in other aquatic environments suffering similar ecosystem impairments (e.g., Chesapeake Bay, Tampa Bay, and the Gulf of Mexico); therefore, by comparison, the recommended magnitude of the load reduction target does not seem unreasonable. However, it should also be recognized that the P load-response curves were generated from models that have been developed over the past 40 years. There are compelling reasons to believe that the lake ecosystem has changed since 1995 and these models may no longer provide reliable responses to P load reductions. In general, the models disregard the potential role of “legacy P” in sediments and the role of other elements (e.g., N and Si) in controlling blooms of phytoplankton populations, which may compromise the rate and extent of ERI responses to external P load reductions.

Drivers of Cyanobacteria Growth and Seasonal Hypoxia

The principal driver for the models used in the analysis and their results is stimulation of primary production by P loading which leads to excessive algal growth, harmful algal blooms and the production of cyanobacterial toxins, principally microcystin – for which the World Health Organization (WHO) drinking water limit is 1 part per billion (ppb) free plus cell bound (WHO 2003). Concentrations of microcystin have exceeded 1,200 ppb in the Western Basin of Lake Erie. While the target load reductions appear adequate to reduce cyanobacterial blooms, they do not ensure that toxin levels will be reduced to levels that no longer pose health threats. The controls on toxin production are not well understood and represent an important research need.

⁴ The desired thresholds identified for eutrophication response indicators in Lake Erie were: (1) Western Basin cyanobacteria bloom biomass no less than that observed in 2004 or 2012, nine years out of ten, and/or reduced risk of nearshore localized blooms; and (2) Central Basin hypoxia August-September average hypolimnetic dissolved oxygen concentration of 2.0 mg/L or more (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015).

A secondary effect of excessive algal growth is the rapid deposition of algal-derived, labile detrital organic matter that enhances consumption of dissolved oxygen leading to the formation of extensive zones of hypoxic hypolimnetic waters in the Central Basin of the Lake during thermally stratified summertime conditions.

The relationships developed between P loads and ERIs are inherently approximate, variable and relatively uncertain. This is in part due to the relative simplicity of the models in attempting to reproduce a very complex ecosystem having a very large degree of natural biological and hydrodynamic variability. Clearly not all processes are modeled, and the process modeling is not always conducted at a level of temporal and spatial resolution that would resolve all the active dynamics. As further discussed below, some processes and dynamics are missing. However, the basic relationship between P loading and algal production, though highly variable and likely influenced by other biogeochemical processes, is deemed central and definitive for Lake Erie. Most telling in this regard is the simple observation of a direct relationship between extent of cyanobacterial blooms and the spring P loading to the Western Basin (see Stumpf et al. 2012; Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015). A notable example is the dramatic difference between the 2011 and 2012 blooms. The 2011 bloom was the largest on record until 2015. In 2012, the spring P load was approximately one sixth of the 2011 P load, and the corresponding 2012 bloom was only about 10% of the 2011 observation. The Lake Erie system clearly appears to respond to changes in P loading with a strong correlation generally captured by the models. It must be recognized that other biogeochemical processes, including N and silica cycling, are important. However, the SAB finds that setting P loading as the initial driver in the Lake Erie system is appropriate and is consistent with the evidence.

The SAB recognizes that the focus of abatement programs should be on reducing those components that readily support growth of phytoplankton communities. This implies that a focus should be placed on reduction of soluble reactive P (SRP) that is generally regarded as completely available, as well as those fractions of total P (TP) that may be partially available to phytoplankton (e.g., certain particulate P and dissolved organic P [DOP] fractions). For example, in the Maumee River on average in 2002-2013 only about 45% of the TP load was actually bioavailable, and although SRP makes up only 21% of the average TP load, SRP makes up about 46% of the average bioavailable load.⁵ The mineralization of organic phosphorus to orthophosphate is a pathway to bioavailability for part of the nonreactive phosphorus component of total dissolved phosphorus. However, Baker et al. (2014a) found that in the Maumee River at Waterville, Ohio, the conversion of dissolved organic phosphorus to orthophosphate added little to the bioavailable P loads entering the Lake. Gradient driven desorption of orthophosphate from particulate phosphorus provides a pathway to bioavailability for particulate phosphorus. However, the portion of the particulate phosphorus that is chemically or physically bioavailable may not support algal growth if that sediment is deposited or buried prior to orthophosphate release to the water column. A study of storm water movement through the lower Maumee River and Maumee Bay showed substantial deposition of sediment between the Waterville, Ohio sampling station and Maumee Bay (Baker et al. 2014b). These observations of sediment deposition underscore the relative importance of SRP loading as a driver of cyanobacterial blooms. Moreover, a recent study indicates that changes in agricultural practices, including some conservation practices designed to reduce erosion and particulate

⁵ Comments to the Science Advisory Board from Dr. David. Baker, October 24, 2016, available at: [https://yosemite.epa.gov/sab/sabproduct.nsf/AF08F14F2631437D85258057007053C8/\\$File/Comments+from+David+Baker,+Heidelberg+University.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/AF08F14F2631437D85258057007053C8/$File/Comments+from+David+Baker,+Heidelberg+University.pdf)

P transport, may have had unintended, cumulative, and converging impacts contributing to increased SRP loads to Lake Erie during the past 20 years (Jarvie et al. 2017).

The SAB notes that some of the process models do include other nutrients (N and silica) and other algal speciation and as such do not totally rely on P loading to drive the system. In fact, nitrate concentrations in the Maumee River have actually been decreasing and the relationship between P and N is not one of simple stoichiometry. As discussed in Section 3.3.1 of this report, taking a dual nutrient management approach in Lake Erie clearly warrants investigation, and is currently limited by a lack of data, primarily on N cycling. The algal community in Lake Erie should be characterized to better understand the relative contribution of N-fixers versus non-fixers. The role of both N-fixation and denitrification in N cycling and N budgets in the system should also be assessed. This will provide information about the importance of N limitation and the potential impact of N reduction strategies (i.e., if N is low, it might stimulate N-fixing species).

The forms of P coming off the landscape are also critical to changes within the Lake Erie system. While TP load has not changed significantly (i.e., there has been no long term trend up or down, even though year to year variation has been high), the fraction of this TP that is “bioavailable” has increased significantly in the last 20 years. This appears to be one of the drivers of cyanobacterial growth, although it should be noted that “turning off” SRP in the models does not reduce cyanobacteria growth enough to reach the maximum allowable cyanobacterial mass in established objectives (i.e., particulate P also plays a role in cyanobacterial growth).

The timing of nutrient inputs is also important to cyanobacterial blooms. It would be useful to evaluate whether there has been an increase in frequency and magnitude of blooms in response to nutrient inputs over time and to recognize how the critical spring period may change or shift in the future.

Uncertainties in predictions of hypoxia are considerably larger than uncertainties associated with predictions of algal blooms. This is due to the fact that the extent and dynamics of hypoxia are confounded by many factors including physical processes, as well as biological processes such as the extent of the winter bloom. Furthermore, whereas the connection between P loads and algal production is relatively direct, the connection between P loading and Central Basin hypoxia is not. Hypoxia is propagated through several functions from P loading to algal production, to rapid deposition of algal detritus, to benthic metabolism and respiration, to oxygen depletion and hypoxia and the potential flux of SRP and dissolved inorganic N (DIN) from the sediment bed during hypoxic events. These functions, in turn, are heavily modified by thermal stratification driven by both short term physical mixing and long term regional climate change. Hence, the lack of a direct relationship between P loading and hypoxia is to be expected, since (in the words of Professor Clifford Mortimer of the Center for Great Lakes Studies at the University of Wisconsin-Milwaukee) “many other spoons stir the pot.” These processes may influence whether hypoxia targets (see footnote 3 of this report) are achievable, and certainly impact the ability of the models to capture the dynamics of hypoxia and predict a robust relationship between P loading and oxygen depletion in the Central Basin. Better parameterization of benthic metabolism and sediment oxygen demand is necessary as well, through inclusion of explicit sub-models of sediment diagenesis.

One current weakness of the evaluation of the hypoxia simulation models derives from the fact that these process models, which can be run for multiple years, have only been run as one year simulations using the same initial boundary or starting conditions in each case. This means that the development or

accumulation of a forwarded residual of “legacy” P or organic matter over time is not currently simulated. This accumulating residual, which would affect the response time of the system to a reduction in loading, is present in both the Western and Central Basins of Lake Erie (Carrick et al. 2005). This response time is probably related to the residence time of metabolizable material and the build-up of reduced chemical species in the sediments that may prolong hypoxia. In some systems this has resulted in a lag in response to loading reductions on the order of years (Jeppesen et al. 2005; Matzinger et al. 2010).

The rationale for an August-September hypolimnetic oxygen tolerance of 2 mg/L, as opposed to a more stringent 4 mg/L which would require a greater P load reduction, is described in the document *Recommended Phosphorus Loading Targets for Lake Erie* (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015). Given the uncertainties in the hypoxia simulations, the SAB finds that 2 mg/L is a reasonable initial target. It should be noted, however, that even with a 40% reduction in P loading, the dissolved oxygen water quality standard of 5 mg/L will, almost certainly, not be met in Central Basin bottom waters and the predicted hypoxic area will range from approximately 2,000 to nearly 6,000 km² for periods in excess of a month. The WLEEM is a process-based model that can provide information on the relationship between loadings of water, sediments, and nutrients and the responses of algal biomass and turbidity/sedimentation. The SAB recommends that the WLEEM be deployed for the whole lake in order to provide information to better understand how load reductions impact hypoxia development.

Missing Components of the Models

The Modeling Subgroup acknowledged that some of the simulation models used to develop load-response curves had missing components (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team Modeling Subgroup 2016). Undoubtedly missing components reflect a variety of processes that are absent or minimally incorporated into the models, although some models are capable of including these processes in future renditions. Such missing components include:

- Temporal variability in the underlying hydrodynamics (e.g., strength and propagation of the Detroit River plume in controlling the water residence time and flushing of the western basin);
- Variations and the vagaries of weather for which the models have no simple means of inclusion;
- The role of N limitation, denitrification and N fixation;
- The controls of algal toxin production (not all *Microcystis* produces toxin, and there is some indication that N may play a role);
- The internal P loading and resuspension and sediment-water interactions in general – although the WLEEM does include a diagenetic sub-model based on a 10-cm thick sediment mixed layer (The SAB finds that a 10-cm thick sediment mixed layer may be too deep; approximately 5 cm would seem to be more appropriate and in agreement with radionuclide chronologies) (Klump et al. unpublished data 2006⁶; Robbins et al. 1977).
- Role of dreissenid mussels, the populations of which are likely not in steady state;
- Changes in seasonality (e.g., the timing and the biogeochemical composition of P in load delivery and how that is tied to activities in the watershed such as fertilizer application and tillage;

⁶ Klump, J.V. Great Lakes Water Institute, University of Wisconsin-Milwaukee, Milwaukee, WI.

- Changes in the P-uptake response of cyanobacteria and other algal species to TP and other forms of P (e.g., bioavailable forms) over time (there is clear evidence that the system continues to shift and that recent blooms are fundamentally different from those experienced in the 1970s); and
- Incorporation of winter-spring diatom blooms under the ice.

All of these issues were discussed to varying degrees by the experts who attended the SAB Lake Erie Phosphorus Objectives Review Panel meeting on June 21-22, 2016. Model predictions could be improved by undertaking work to incorporate these missing components. In particular, the SAB notes the importance of extending mechanistic models to include sediment diagenesis and nutrient flux (and refine the depths of the active layer) and incorporating the influence of winter blooms into the models. Consideration should also be given to embedding a *Cladophora* model within the whole lake WLEEM (the SAB's findings and recommendations concerning *Cladophora* growth are discussed in the response to Charge Question 3).

Importance of Climate Change

It has also been well recognized that, because of climate change, management practices put in place today may not result in the same ecosystem outcomes in the future (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015; Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team Modeling Subgroup 2016). The Task Team has indicated that achieving flow weighted mean concentration (FWMC) objectives for TP and SRP is expected to result in P loads below targets 90% of the time (i.e., 9 out of 10 years) "if precipitation patterns do not change" (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015). The Lake Erie region is projected to be both warmer and wetter in the future. As outlined by Bosch et al. (2014), projections of climate change scenarios include:

- Increased precipitation (~10-20%);
- Increases in the frequency of intense precipitation events (important in a system that is event driven, where perhaps 70% or more of the loading from the watershed occurs over 10-15 days of the year, and where high precipitation after fertilizer application is likely to be important);
- Expanded summertime conditions and a longer growing season;
- Prolonged thermal stratification and hypolimnetic sequestration;
- Changes in regional climatology and wind fields;
- Changing lake levels, which in Lake Erie have the potential to significantly change the thickness of the hypolimnion and its oxygen carrying capacity;
- Changes in ice cover – including extent, duration and timing; and
- Watershed changes (e.g., increases in crop production due to variables such as increased precipitation and atmospheric CO₂; increases in evapotranspiration rates, which in some systems actually is projected to decrease runoff; and changes in soil microbial activity).

The SAB notes that some of the models used by the Task Team to predict the response of selected eutrophication response indicators to P loading (e.g., WLEEM) are capable of incorporating elements of climate change scenarios.

Effects of Phosphorus Load Reductions on Fish Production

Experts who attended the SAB Lake Erie Phosphorus Objectives Review Panel meeting on June 21-22, 2016 noted the concern of some resource managers that P load reductions could have a detrimental effect on fish production. To the contrary, reductions in P loading could shift algal speciation in favor of more species that are more palatable to primary consumers and may in fact enhance the food web by restoring a trophic pathway to secondary and tertiary production (Yurk and Ney 1989; Ludsins et al. 2001). Cyanobacteria have long been considered a poor quality food for key zooplankton grazers that link phytoplankton to higher trophic levels (Ali Ger et al. 2016). Therefore, at present, much of the primary production (cyanobacteria) in Lake Erie probably represents an ecological dead end (i.e., it does not enter the food chain but simply sinks to the bottom). Alterations in fish habitat and the abundance of mussels also have an effect on fish abundance but this effect is not well understood.

Appropriateness of the Phosphorus Load Targets

In general, the SAB finds that, based upon the coupling of current models to a relatively long term observational record, a 40% reduction in TP load to the Western and Central Basins projects an estimated response which improves water quality and reduces HABs in keeping with the stated goals in the Task Team report (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015). However, even with this reduction, cyanobacteria blooms may still occur with some frequency in the western arm of the western basin in Maumee Bay. Ultimately, greater load reductions may be necessary to achieve the desired thresholds for the ERI's. As previously noted, prediction of hypoxia is associated with a higher degree of uncertainty than prediction of cyanobacteria blooms. Therefore, attenuation of hypoxia is more problematic.

As previously mentioned, lake and tributary monitoring is critical for continued development of the models and for adaptive management. Lags in indicator response and inter-annual trends can only be elucidated accurately with an adequate monitoring program in place. In particular, monitoring of the 12 priority watersheds identified by the Annex 4 Objectives and Targets Task Team is essential and should include measurement of: precipitation, flow, N species (good *in situ* NO₃⁻ sensors are available for high temporal resolution sampling), P (all forms) and organic carbon (dissolved organic carbon [DOC] and particulate forms). Event based sampling (to capture the effects of the rising and falling limb) within these systems is also critical for calculating loads.

The SAB also finds that linking the in-lake models to models of nutrient loading in the watershed is essential, and is underway in some regions. The inclusion of these landscape models in the analysis is an inescapable necessity since actions and practices on the land will enable the 40% P load reduction to the Western and Central Basins.

Key Recommendations

Short Term:

- Lake and tributary monitoring should be conducted to support continued development of the models and adaptive management. In particular, event based sampling to capture the effects of precipitation and tributary flow is critical for calculating loads. Dissolved organic or non-reactive P in Lake Erie and tributaries should also be further investigated.

- Mechanistic models should be extended to include sediment diagenesis and nutrient flux. The depths of the active layer should be refined (e.g., 10 cm is too large - the depth may be 5 cm or less). This will require calibration of the mechanistic models to field and laboratory data specific to Lake Erie.
- If feasible, given the computational resources that may be required, simulations should be run continuously over a period of years as an extended sequence rather than resetting initial conditions every year.

Intermediate Term:

- If feasible, given the computational resources that may be required, the WLEEM should be deployed for the whole lake to provide information to better understand how load reductions impact hypoxia development.
- Consideration should be given to embedding a *Cladophora* model within the whole lake WLEEM.
- A better understanding of the influence of winter blooms (under ice phenomena) should be developed and incorporated into the models, particularly for hypoxia in the Central Basin.
- The algal community should be characterized to better understand the relative contribution of N-fixers versus non-fixers. The role of both N-fixation and denitrification in N cycling and N budgets in the system should be assessed.

3.2. Cladophora Growth

In its charge to the SAB, the EPA has indicated that additional P load reductions may be necessary to reduce nuisance levels of *Cladophora* in the nearshore waters of the Eastern Basin of Lake Erie. The SAB was asked to comment on whether scientifically sound P load reduction recommendations could be developed at this time to address *Cladophora* growth. In responding to this charge question, the SAB considered available information about *Cladophora* ecology, its occurrence in Lake Erie, the ecosystem consequences of *Cladophora* blooms and capabilities of the Great Lakes *Cladophora* Model.

3.2.1. Development of Recommendations to Address Nuisance Levels of *Cladophora* Growth

*Charge Question 3. Can scientifically-sound phosphorus load reduction recommendations be developed at this time that will reduce *Cladophora* growth in the Eastern Basin of Lake Erie?*

The SAB finds that further research must be completed before scientifically sound P load reduction recommendations to reduce *Cladophora* growth in the Eastern Basin of Lake Erie can be developed. There is insufficient information available to understand and weigh the relative importance of environmental factors (including P inputs) that might have causal links to *Cladophora* growth and senescence. Moreover, there are limited observations of the spatial extent of a perceived *Cladophora* problem that seems to have been identified at sites along the shores of the Eastern Basin of Lake Erie. That said, the issue of nuisance *Cladophora* growth in nearshore regions has been identified as an important issue in the Great Lakes because it affects selected sites in each of the Great Lakes (Auer et al. 2010). This makes it a pressing regional issue in need of scientific and management attention.

Basic Ecology of *Cladophora*

Cladophora glomerata is a macroscopic, filamentous, branched green alga (Chlorophyceae) that usually grows attached to hard benthic substrates in a variety of lakes, streams and rivers worldwide (Wehr et al. 2015). This alga can grow in such profusion that it forms extensive, dense mats achieving several meters in length. The occurrence of this alga is usually associated with ample nutrients (Dodds and Gudder 1982; Higgins et al. 2008). There is experimental evidence that *Cladophora* grows best under high concentrations of both N and P (e.g., Rosemarin 1982). Experimental enrichment of both N and P performed *in situ* in Lake Michigan has led to extensive growth of *Chaetophora*, a close relative to *Cladophora* (Carrick and Lowe 1988; 2007).

Occurrence of *Cladophora* in Lake Erie

Occurrences of *Cladophora* were reported in the Great Lakes as early as 1930 (Neil and Owen 1964). The distribution of *Cladophora* appeared to expand through the Great Lakes from 1960-1975, and this was attributed to large nutrient inputs in the nearshore regions of Lakes Huron, Michigan and Erie with biomass ranging from 100 - 800 g dry weight/m² (Auer et al. 1982). While the biomass declined during the 1970s and into the early 1980s coinciding with the P abatement programs in the Great Lakes, its abundance underwent a surprising upturn again in the mid-1980s and early 1990s (Higgins et al. 2008). More recently, standing crops up to 700 g dry weight *Cladophora glomerata*/m² have been observed in shallow nearshore waters (0.5 - 2 m depth) along the northern shore of the Eastern Basin; its occurrence in this location may be linked to the presence of suitable hard substrate as well as other factors. Hard substrate also supported colonization of dense populations of dreissenid mussels (*Dreissena polymorpha* and *Dreissena bugensis*), which may exacerbate the problem of *Cladophora* growth by increasing water clarity and enriching local regions with excreted nutrients, especially readily available P as SRP (Heath et al. 1995). Increased water clarity allowed *Cladophora* populations to develop to depths up to 20 m. Recent studies indicate that tissue content of P in *Cladophora* (i.e., P-quota) is an important metric of growth potential of this alga: tissue of <0.07 µg P/mg dry weight is unproductive; tissue of >0.20 µg P/mg dry weight is considered to be highly productive, capable of producing significant biomass, likely leading to significant sloughing and formation of large amounts of “beach muck” upon decomposition (Higgins et al. 2005, 2008; Lake Erie Millennium Network 2016). The levels of P storage in algal tissues appear to be useful indicators of aquatic ecosystem eutrophication and thus subsequent remediation (Price and Carrick 2016).

Ecosystem Consequences of *Cladophora* Blooms

Cladophora often plays a key role as an “ecosystem engineer” (an organism that alters the environment in a way that affects the other organisms present) and this can have both important positive influences as well as potentially negative consequences. This alga can serve as a substrate for epiphytic algal and bacterial assemblages, which may also contain invertebrates (Lowe et al. 1982; Stevenson and Stoermer 1982; Chilton et al. 1986). While it may not be fed upon directly by invertebrates and fish, as substrate it indirectly provides food for upper trophic levels. It is generally found in shallow, nearshore environments where turbulent wave action is common. Because of its turbulent environment, filaments frequently break or slough off, forming mats that can wash ashore and decay to a foul smelling mass (i.e., beach muck). The processes that lead to sloughing and decay of the standing crop are not well understood, and a recent workshop (Lake Erie Millennium Network 2016) identified *Cladophora*

senescence and decay as a necessary research topic. As this “muck” decays, it gives off noxious odors, and provides a habitat for biting flies and a substrate for *E. coli* and the bacterium responsible for avian botulism. Because of its ability to scavenge and store excess P, *Cladophora* has often occurred as a nuisance alga, capable of growing to large standing stocks leading to beach fouling as large stands of “muck.” Although there is no stated limit of acceptable standing crop, it is generally considered that less than 30 g dry weight /m² is indicative of “good” conditions (Lake Erie Millennium Network 2016). Biomass density of greater than 50 g/m² has been suggested as the threshold for the onset of problem conditions (Auer et al. 2010).

The Great Lakes Cladophora Model (GLCM)

The Great Lakes *Cladophora* Model (GLCM) is a mechanistic, mass balance model with two state variables, net algal biomass (growth minus respiration and sloughing) and stored P. The forcing conditions are: available SRP, incident light intensity and temperature (see Appendix B-9 of Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team Modeling Subgroup 2016). The model was calibrated by direct observation in the field (Lake Huron) and laboratory studies; it was confirmed by comparing the fit of model predictions to observations in Lake Michigan. *Cladophora* growth may be linked to SRP content in the overlying water column and ultimately with the P-quota. The SRP in the overlying water column is influenced by local inputs from nearby tributaries, as well as the presence and density of dreissenid mussels (Higgins 2004). Therefore, a scientifically-sound model must incorporate site-specific factors, including local hydrodynamics.

Sensitivity analysis has indicated that the model is most sensitive to the minimum cell P-quota, the maximum growth rate and the maximum respiration rate; it is marginally sensitive to parameters related to phosphate uptake. Model curves for SRP vs. maximum standing crop and SRP vs. stored P content show that SRP of 0.9 µg P/L would yield a maximum standing crop of 30 g dry weight/m² and a stored P content of 0.075 percent P. That is, 0.9 µg P as SRP/L would yield an acceptably low standing crop and low growth potential for *Cladophora*. This level of SRP has been related to TP concentrations and total P load to Lake Erie via load-response curves derived empirically and illustrated in Figures B9-2 and B9-3 in Appendix B-9 of the *Annex 4 Ensemble Modeling Report* (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team Modeling Subgroup 2016). This analysis implies that *Cladophora* growth and P-quota could be controlled with a TP load reduction to 7,000 MT/year, or a load reduction of 25 percent. A goal of 40 percent reduction in TP load to Lake Erie was recommended by the Task Team to attain other desired ERI thresholds; the implication of the GLCM analysis is that meeting this goal would also reduce *Cladophora* growth.

The GLCM appears to provide a first order evaluation of *Cladophora* occurrence and initial predictions regarding attainment of the ERI of reduction of *Cladophora* standing crops to acceptable levels with little growth potential, as indicated by P-quota. However, further research must be completed to fill knowledge gaps (listed in the key recommendations below) before recommendations for P load reductions to reduce *Cladophora* growth can be developed with an adequate level of certainty and scientific confidence. In this regard, it is particularly important to link the data needs of the model with the data collection process. The EPA should evaluate data needs to reduce uncertainty in the model and better predict algal growth and presence.

Key Recommendations

Short Term:

- The GLCM should be calibrated and confirmed in the Eastern Basin of Lake Erie using existing data.
- Site specific factors, including local hydrodynamics, tributary inputs, mussel densities, and other important drivers, should be incorporated into the GLCM.

Intermediate Term:

- Current and future studies should include investigation of P load inputs from key tributaries (e.g., the Grand River Ontario) and the relative significance of local inputs and open lake P on stimulating and supporting *Cladophora* growth.
- The process or processes that lead to sloughing (local hydrodynamics, algal senescence, etc.) and eventual decay of *Cladophora* to “beach muck” need further investigation and likely need to be appended to the GLCM.
- The development of a spatial model linked to remote sensing information should be explored to better understand *Cladophora* distribution.
- The GLCM should be included in a broader whole-lake model to forecast the likelihood of *Cladophora* growth along the shores. Consideration should be given to the possibility that as hazardous algal blooms abate, the likelihood of *Cladophora* growth along the shores may be increased due to improvements in water clarity and colonizable habitat.

Long Term:

- The GLCM would be more useful if it could be applied to the diversity of important benthic algae (e.g., *Chara*, *Lyngbya*, *Spirogyra*, etc.) that can cause similar problems in the Great Lakes. The similarities and differences among these various species should be considered in order to provide an adequate representation of the problems of nuisance benthic algae in general.

3.3. Nitrogen Control

The current nutrient strategy for Lake Erie focuses on limiting P loading to the Lake. However, the Task Team has also recommended tracking tributary N loads to the Lake. The EPA has asked the SAB to provide recommendations to help determine whether consideration of N control is warranted.

3.3.1. Determining Whether Nitrogen Control is Warranted

Charge Question 4: What recommendations can the SAB provide for development of an approach to help determine whether consideration of nitrogen control, in addition to phosphorus, is warranted in Lake Erie to prevent harmful algae blooms and manage hypoxia? In

particular, what questions, relationships, or research priorities related to nitrogen loading (different forms and sources) and in-lake cycling must be addressed?

The EPA and the European Commission have adopted a dual nutrient reduction strategy, including both N and P, to prevent and reduce eutrophication of both inland and coastal waters (European Commission 2009; U.S EPA 2015). While P has always been considered the limiting nutrient for Lake Erie and most other lakes, there is increasing evidence of the possible need for N control as well. The Baltic Sea can be viewed as a model that exemplifies the strategy to control both N and P. Although the Baltic Sea has some similarities to Lake Erie, most of the Baltic is estuarine but of low salinity. The importance of N control in lakes is currently unsettled and is the subject of vigorous scientific debate (Paerl et al. 2016; Schindler et al. 2016). While N control in Lake Erie may be premature, especially given its difficulty and expense, additional research to determine the importance of N should be a high priority. In Lake Erie, phytoplankton species composition and seasonal succession can vary with both N and P concentrations and ratios, and thus phytoplankton biomass does experience co-limitation of N and P during late summer and early fall (Moon and Carrick 2007). The phytoplankton species composition in western Lake Erie has changed over time, likely reflecting changes in N and P inputs and cycles due to changes in agriculture, the invasion of dreissenid mussels, climate change and other causes (Smith et al. 2015). N and P cycles are both coupled and uncoupled. Both nutrients are required in algal biomass in roughly Redfield ratios (106:16:1 C:N:P), but are cycled differently through the environment. N can be internally removed by a number of biotic and abiotic processes including: denitrification, anaerobic ammonium oxidation (anammox) and transformed by dissimilatory nitrate reduction (DNRA), and ammonia volatilization. Nitrogen cycling is likely influenced by the presence of dreissenid mussels (Svenningsen et al. 2012) and this may in turn affect N:P stoichiometry and nutrient availability to phytoplankton and macroalgae. Rates of internal N and P cycling are important as well as the loading rates. As further discussed below, three of the Lake Erie models currently incorporate N cycling but none address internal N and P pools, fluxes and ratios.

Need for a Multiple Nutrient Strategy

There is increasing support for adopting a multiple nutrient strategy to reduce eutrophication, in both fresh and salt waters (Conley et al. 2009; U.S. EPA 2015). For Lake Erie this means that, after the initial consideration of P control, N and P control should be considered; this would be similar to the approach taken for the Baltic Sea (Conley et al. 2011). Many documents urge additional control of external P loading in the Lake Erie watershed (e.g., Stumpf et al. 2012; Michalak et al. 2013; IJC 2014; Scavia et al. 2014; Dove and Chapra 2015; Powers et al. 2016); however, there is evidence that N control is also needed (Chaffin et al. 2013; Davis et al. 2015). As previously noted, the toxic cyanobacterium *Microcystis*, the major concern in western Lake Erie, does not fix N and therefore requires a fixed N source. *Microcystis* can become N limited in late summer in western Lake Erie (Chaffin et al. 2013). In addition, it becomes more toxic when nitrate is abundant in lake water (Harke et al. 2016). Furthermore, *Microcystis* is very well adapted to obtaining P when levels of P are low in lake water because it can use enzymes (e.g., alkaline phosphatase) to remove P from organic compounds (hydrolyze phosphate esters) that are more readily abundant in lake water in comparison to simpler dissolved forms of P (Harke et al. 2016). While nitrate is the predominant form of N in Lake Erie and is highly mobile, there are also lower levels of ammonium and other reduced N compounds (Chaffin et al. 2013) in the Lake. Since these other reduced N compounds can be readily used by most cyanobacteria, they could be significant contributors to blooms, even at low concentrations.

The Maumee River drains a mostly agricultural watershed and discharges into the Western Basin of Lake Erie, where annual cyanobacterial blooms have occurred since the mid-1990s. Stow et al. (2015) document a decrease in total N (TN) load from the Maumee River since 2000 (despite concurrent increases in discharge). They also provide evidence for decreased nutrient inputs in summer months (May-July) in recent years, and seasonal shifts in the TN:TP ratio (decrease in March-April; increase in September-November). Recent cyanobacterial blooms in the Western Basin are fundamentally different from those occurring in Lake Erie prior to the P load reductions implemented in the 1970s. While most blooms prior to the 1990s were comprised of filamentous, heterocystous cyanobacteria (e.g., *Aphanizomenon*, a potential N-fixer), the modern blooms are comprised mostly of the non-N-fixing genus *Microcystis* (Steffen et al. 2014). The inability of these cyanobacteria to fix atmospheric N suggests an important role for external N loads from the watershed as well as an essential role of internal N recycling mechanisms in modulating the total biomass and especially the composition of the cyanobacteria community in the Western Basin. In addition, the toxin produced by *Microcystis* (and other cyanobacteria), microcystin, contains a large proportion of N (10 N atoms per molecule), and production of microcystin is strongly correlated with available N (Davis et al. 2015). This apparent N problem in Lake Erie is not confined to the *Microcystis* blooms in the Western Basin. Indeed, algal blooms in other parts of the Lake, including annual *Planktothrix* blooms in Sandusky Bay, Ohio (Davis et al. 2015) and ongoing blooms of *Cladophora* (Davies and Hecky 2005), also involve non-N-fixing algae. Furthermore, the proliferation of nuisance benthic algae (e.g., *Cladophora* and closely related species) has been experimentally and empirically linked to available N and P enrichment in the Great Lakes (See Carrick and Lowe 1988, 2007),

Low availability of N in lake water is associated with a switch between species of cyanobacteria (from the occurrence of *Microcystis* to *Anabaena*). Thus, if N concentrations increase, the persistence of *Microcystis* blooms could increase even if P concentrations are lowered. In addition, both inorganic and organic N species can be important. Davis et al. (2010) found that growth of the toxic *Microcystis* strains were enhanced by inorganic N whereas the non-toxic strains were stimulated by organic N. Moreover, Zhang et al. (2015) found that microcystin production appeared to be regulated by total N and NO_3^- but not by NO_2^- or NH_4^+ . Many phytoplankton species exhibit greater physiological response to N:P than to either N or P separately. Numerous studies have shown that the availability of a combination of N and P often results in higher cyanobacterial biomass than either nutrient added singularly (e.g., Elser et al. 2007; Lewis and Wurtsbaugh 2008; Scott and McCarthy 2010, 2011). With increasing frequency since 2002 there have been reports of algal blooms that are N and P co-limited or N limited, especially during mid-to-late summer. In addition, increased availability of P from both external and internal sources can enhance N limitation, especially under conditions where biological N_2 fixation is not possible.

Model Capability

The model descriptions in the draft Annex 4 ensemble modeling report suggest that, of the eight models used to predict ERIs (not including the *Cladophora* model), only the Ecological Model of Lake Erie (EcoLE), Western Lake Erie Ecosystem Model (WLEEM) and Estuary and Lake Computer Model – Computational Aquatic Ecosystem Dynamics Model (ELCOM-CAEDYM) include state variables for N. None of the models appear to address internal accumulations of N and P by phytoplankton and corresponding N:P ratios, which could be used to explore possible N-loading scenarios.

Best Management Practices

The Maumee Basin is characterized by extensive row crop agriculture with tile drainage as well as concentrated animal feeding operations. Agricultural Best management practices (BMPs) for P control may help control N but may not be sufficient to attain the level of N control that could be needed. Best management practices for P control often target sediments because much P is particulate. Nitrogen, especially nitrate, is mostly dissolved and much more mobile, so if N removal becomes a goal to be achieved, additional BMPs may be required to increase N removal. The agricultural activity of the Mississippi River Basin leads to the hypoxia in the Gulf of Mexico. Studies of the Mississippi should provide useful BMPs for the Maumee Basin. A recent study indicates that about half of the total N and P in the Mississippi River Basin is contributed by agricultural (about 80% of the agricultural contribution of N comes from fertilizer and 20% comes from manure; and about 55% of the agricultural contribution of P comes from fertilizer and 45% comes from manure) (Alexander et al. 2008; Robertson and Saad 2013). There is some evidence that P loads from agricultural lands in Iowa have declined as a result of the implementation of BMPs (Wang et al. 2016).

In order to evaluate the importance of N control in Lake Erie, research is needed to answer key questions and understand important relationships. These are listed in the key recommendations provided below.

Key Recommendations

Short Term:

- Research should be conducted to determine the total N loadings entering Lake Erie over time and space, including all the major species of N (oxidized, reduced, organic, and particulate). An N budget should be developed for Lake Erie, especially the Western Basin, similar to that for Lake Michigan (Han and Allan 2012).
- Research should be conducted to show the reliability of current models for assessing the role of N in Lake Erie eutrophication and whether the models can be improved (or new models developed) to more completely incorporate N (including internal N and P pools and ratios).
- Research should be conducted to understand the expected response of the four eutrophication response indicators to N reduction in the improved models.

Intermediate Term:

- Research should be conducted to determine: 1) how much of the external N loading can be removed by internal removal processes; 2) the consequences of legacy N and P in the sediments and the differences in internal cycling; and 3) the downstream consequences of not following a dual nutrient strategy.
- Research should be conducted to further understand: 1) the importance of concentrations and ratios of N to other nutrients (P, but also Si) in directing or controlling ecosystem functions; and 2) the balance in the ratio of N to P that would be best for ecosystem functioning.

• BMPs should be developed and applied to achieve additional N reduction in Lake Erie if needed. Given the difficulty and expense of controlling and reducing N loadings, it is important to optimize ecologically and economically the N sources to be reduced.

• The EPA should determine the reduction in N loading that results from reduction of P loading.

Long Term:

• Lessons learned from case studies of nutrient reduction in the Baltic Sea and other areas should be applied to Lake Erie. This should include scientific, technical, policy and governance strategies.

3.4. Evaluation of Nutrient Reduction Targets

Inter-annual loading trends for the Maumee River are greatly influenced by annual variability in flows (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015). The Task Team identified a maximum flow below which the target load should be met and recommended the use of flow-weighted mean concentrations (FWMC) as a benchmark for any given tributary load. The SAB was asked to comment on the use of FWMC and any other approaches that should be considered to account for inter-annual variability in hydrology in assessing progress in reducing tributary loadings of P.

The Task Team also recommended development of a comprehensive adaptive management program that would include annual routine monitoring of appropriate load, FWMCs and in-lake nutrient eutrophication response indicators in conjunction with an intensive monitoring, research and operational model application program every five years. The SAB was asked to comment on the adaptive management approach.

3.4.1. Assessing Progress in Reducing Tributary Loadings of Phosphorus

Charge Question 5. Please comment on the use of FWMC and any other approaches that should be considered to account for inter-annual variability in hydrology in assessing progress in reducing tributary loadings of phosphorus to the Lake.

In a stratified sampling program typically used in loading studies (e.g., Heidelberg University's monitoring of Ohio tributaries), each sample does not have equal weight in determining the average. Some samples may represent time intervals of one or more days, while others represent intervals of only a few hours. Some form of sample weighting must be used to properly average tributary data collected at such varying frequencies. In river systems, two types of mean concentrations can be considered: a time-weighted mean concentration and a flow-weighted mean concentration (FWMC). The FWMC is the preferred approach for calculating average concentrations in tributaries with variable flows. For example, FWMC can be used to represent the average TP concentration in water discharged from the Sandusky River to Sandusky Bay. To determine FWMC, the concentration in each sample is weighted by both the accompanying time interval and the flow. FWMC represents the total load for the time period (e.g., annually or March-July) divided by the total discharge for the same time period.

Flow Weighted Mean Concentrations are recognized as useful measures to address inter-annual variability because they normalize the tributary P loading/delivery with respect to flow so that year-to-

year performance (referring to nonpoint source nutrient controls) is not confounded by inter-annual hydrology (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015). The Task Team recommended using tributary FWMC as a benchmark to track progress in load reduction. The SAB recommends reviewing all available monitoring outputs (e.g., discharge, flow, concentrations, loads) from significant tributaries and multiple assessment approaches (including FWMC and flow-adjusted concentrations) to evaluate efforts to control nutrient loadings. In addition, uncertainty in the values derived using the flow-weighted or flow-adjusted approaches should be explicitly quantified and presented, and detailed information on the implementation of P reduction strategies should be collected to help identify the reasons for changes in P loads delivered to the Lake.

The use of FWMC analyses alone may “mask” elevated concentrations that could result in algal blooms. Any analysis of the effect of nutrient concentrations should consider the response of the organisms intended to be controlled. Nutrient concentrations (as affected by nutrient loadings) control organism responses and the effect of temporal variability is an important consideration, especially for organisms that have rapid life cycles and may respond quickly to shifts in nutrients.

The Heidelberg Tributary Loading Program (Heidelberg University 2016) collects and analyzes approximately 450-500 water samples for pollutants at its monitoring stations each year. From that information it calculates annual pollutant loads from each station and the loads of nutrients, sediments and pesticides delivered to Lake Erie or the Ohio River. The Program makes the tributary data for most of the monitoring stations publicly available, and also distributes a spreadsheet for data analysis that calculates FWMC along with loadings for the nutrient parameters (TP, SRP, $\text{NO}_2^- + \text{NO}_3^-$, Total Kjeldahl N or TKN) measured. Therefore, FWMC is a readily available statistic. For pollutants that tend to increase in concentration as flow increases (like TP in the Maumee River), the FWMC will be greater than the time-weighted mean concentration.

FWMC is considered by the Task Team to be a key tool for nonpoint nutrient control efforts (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015). FWMC has intuitive appeal because it is a concentration, which may be easier to understand and communicate than “mass loading.” FWMC is also useful for developing tributary inputs appropriate for the advanced process-based models (WLEEM and ELCOM- CAEDYM) that require specification of both flow and nutrient concentration in each tributary, instead of the tributary or basin-aggregate mass loadings used by the simpler P mass balance models. An example showing how the FWMC approach can be implemented is presented by Sether et al. (2004). The authors used this method to compare annual load estimates of multiple water quality constituents across several sub-basins, accounting for differences in average annual stream flow. Sether et al. (2004) also demonstrated an approach for calculating confidence limits for FWMC estimates, explicitly acknowledging the uncertainty of these estimates and recognizing that this uncertainty can influence how the results are interpreted in a management context. The SAB notes that FWMC estimates for Lake Erie also should be accompanied by an appropriate quantitative estimate of their uncertainty.

Annual discharge from the Maumee River is highly variable due to variations in the intensity, amount and timing of precipitation. This variability is also an important factor leading to yearly differences in P loads. Similarly, discharge from spring to early summer (March-July) varies annually, and inter-annual variability during this period has been associated with variations in the size of the summer cyanobacteria bloom (Stumpf et al. 2012; Obenour et al. 2014); therefore, tributary loadings during this “critical period” merit particular attention. The Task Team has attempted to account for this confounding

behavior by identifying a maximum flow below which the target load should be met and by recommending the use of FWMCs to track progress for any given tributary target load. Examination of Figures 9 (Maumee River discharge), 10 (TP FWMC and load) and 11 (SRP FWMC and load) in *Recommended Phosphorus Loading Targets for Lake Erie* (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015) suggests that similar trends are evident in FWMC and loading, especially for 5-year running averages. It appears that appropriate filtering (e.g., 5-year running average) is also a necessary component of assessing trends in Maumee River discharges, concentrations and loads. Although the Task Team's use of FWMC has focused on the Maumee River, the calculation should be considered for other Lake Erie tributaries that are monitored using stratified sampling programs.

The SAB notes that FWMCs are distinct from flow-adjusted concentrations (FACs), another tool that should be considered in assessing progress in reducing tributary loadings of P. FACs are the residuals from a statistical model relating concentration to discharge flow. FACs are used to remove the seasonality from tributary monitoring data, and for detecting annual trends in the data once seasonality is removed. For example, flow-adjusted concentrations were demonstrated by Stow and Borsuk (2003) to aid in assessment of nutrient TMDL implementation on the Neuse River. Helsel and Hirsch (2002) also provide information on the flow-adjusted concentration method.

Stow et al. (2015) note that Maumee River discharge increased from 1984-2013, a pattern that has been shown to be consistent with long-term precipitation increases. In order for FWMC to offer an accurate assessment of progress in reducing tributary loadings of P to Lake Erie, the assessment must also consider the long-term trends in precipitation and discharge, and the FWMC benchmarks must be adjusted as necessary to compensate for such trends affecting nutrient loadings. Discussion by Stow et al. (2015) is particularly relevant regarding the use of FWMC or other approaches that should be considered to account for inter-annual variability in hydrology:

“While it is generally acknowledged that targets may be exceeded during years of unusually high precipitation and tributary discharge, the use of load targets remains a common management tool. However, Milly et al. (2008) highlighted the growing recognition that, for variables such as tributary discharge, the assumption of stationarity, in an era of uncertain climate change, poses management challenges. Our results, indicating progressive precipitation and discharge increases in the Maumee River basin and concurrent phosphorus input increases to Lake Erie, suggest that imposing fixed load targets may require phosphorus concentrations to be persistently lowered to compensate for increasing discharge, if the targets are to be achieved. As phosphorus load targets are re-evaluated pursuant to the updated 2012 GLWQA, it may be appropriate to address the possibility that continued discharge increases into the future may affect target attainment even if phosphorus reduction strategies are successful.”

This statement highlights the need for future collection of detailed information on the implementation of P reduction strategies in each major watershed.⁷ Without this information, it will not be possible to adequately identify the primary reasons for the observed changes (or lack thereof) in P loads delivered to

⁷ The Task Team identified a number of priority watersheds (Great Lakes Water Quality Agreement Annex 4 Objectives and Targets Task Team 2015).

Lake Erie. This will limit the ability to adequately assess the effect of P reduction strategies in light of other confounding factors such as those related to climate change.

The SAB also notes that, as previously discussed, P may not be the only factor affecting algal growth in Lake Erie; N, silica or other micronutrients may also affect algal growth. If the focus of the Task Team expands to consider the control of other nutrients, the same assessment approaches should be applied to tributary monitoring data for those nutrients to evaluate efforts to control sources of nutrient loadings.

Key Recommendations

Short Term:

- Uncertainty in the values derived using the flow-weighted or flow-adjusted assessment approaches should be explicitly quantified and presented, and detailed information on the implementation of P reduction strategies should be collected to help identify the reasons for observed changes in P loads delivered to Lake Erie.

Intermediate Term:

- All available monitoring data from significant tributaries and multiple assessment approaches should be reviewed to evaluate efforts to control sources of nutrient loadings. The evaluation should include relationships between hydrology, climate, agricultural practices, source control and trends in nutrient loads and concentrations.

3.4.2. Adaptive Management Program

Charge Question 6. Please comment on the value of applying the existing eutrophication models on an ongoing basis to periodically evaluate phosphorus loading targets and eutrophication response indicators. What key elements should be included in the adaptive management approach to successfully implement and evaluate our nutrient reduction goals for Lake Erie?

The SAB strongly endorses the development of an adaptive management program to evaluate the responses of eutrophication indicators in relation to nutrient reductions consistent with the goals developed for Lake Erie. The adaptive management program should involve an ongoing evaluation of the efficacy of loading reductions in achieving the desired responses of the eutrophication indicators and the adjustment of management actions, monitoring, and modeling in light of new information. This is particularly important given uncertainties in the present P-reduction targets with respect to the expected response indicator outcomes, as well as the potential for changing future conditions. An important component of adaptive management is the opportunity to identify alternative management actions if reductions in loadings fail to produce the desired or anticipated outcomes. The SAB provides the following recommendations for adaptive management.

1. A standing adaptive management committee should be appointed. The SAB recommends that the EPA formally appoint a standing adaptive management committee that is supported over the long-term. The committee should include technical experts (both academic and agency scientists) and be charged with coordinating ongoing modeling and monitoring to evaluate progress towards meeting loading targets and the desired values of the ERIs. The committee should consider alternative

management actions and develop the necessary supporting science if reductions in nutrient loading fail to achieve the desired outcomes as measured by the ERIs. Through this process, adaptive management can usefully inform future management decisions.

2. A coordinated binational long-term monitoring strategy should be developed. It is critical to provide support for stabilizing and enhancing long-term monitoring in order to assess whether loading and ERI targets are being met. Consideration should be given to the following activities:
 - Assessing available loading information and developing standardized protocols for loading estimates, including correlation between P loadings from major tributaries (estimated from hydrologic loads and FWMC of total P and bioavailable P) and ERIs;
 - Maintaining current tributary monitoring capabilities (e.g., Heidelberg University) and adding additional tributaries;
 - Developing standardized protocols for monitoring, evaluating and reporting values of ERIs (cyanobacteria; hypoxia; *Cladophora*) in relation to management objectives;
 - Considering the potential for additional ERIs (i.e., chlorophyll a, biological endpoints such as benthic organisms in hypoxic areas and general fish productivity; measuring the health and diversity of fish communities, particularly Whitefish, *Coregonus chupeiformis*);
 - Ensuring that measurements are made of those variables that are necessary for calibrating and assessing the performance of models and for evaluating alternative management actions as necessary (see recommendations below).
 - Ensuring that measurements are being made of those variables that are necessary for development of new or improved models (i.e., mechanistic models of sediment diagenesis, nutrient flux, and sediment oxygen demand);
 - Incorporating measurements that provide “early warning” for climate change impacts.
3. Recommended models should be used as part of the adaptive management process. As previously indicated, it may not be necessary to run all of the models that were included in the ensemble modeling effort. However, the SAB finds that models can be used as part of the adaptive management process to both identify and evaluate alternative management actions. They can also be used to identify data gaps and to run future scenarios. In particular, the SAB recommends that:
 - Models be used to make annual predictions of ERIs (cyanobacteria, hypoxia and *Cladophora*) and post-audits be conducted to evaluate these projections;
 - Models be refined based on changing loadings and other new data;
 - Estimates of uncertainty be improved in the models;
 - Lake models be linked to upstream source functions via watershed models;
 - Cases where models do not perform well be used to develop alternative hypotheses;
 - Models be built into alternative hypotheses as appropriate.
4. Alternative management actions may be required. The attempt to manage eutrophication in the Western Basin of Lake Erie by reducing external P loading by 40 percent is based on the assumptions that: (1) external P-loading is the sole driver, or at least the overwhelmingly major driver, of HABs, hypoxia, and *Cladophora* proliferation, and (2) reduction in external P loading will result in a reduction of these responses. It should be recognized that nutrient reduction is a management action that can be evaluated within an adaptive management program. Depending on

the success of nutrient reduction in achieving the desired values of the ERIs, additional factors beyond reducing external P loading might need to be identified and incorporated into the management strategy.

An important task for the adaptive management committee is to propose alternative drivers for the ERI's and to assess what monitoring/modeling/experiments could be conducted to most effectively distinguish among them. This can be done using a more passive approach wherein hypotheses are modified and tested iteratively by adjusting design operations (sometimes called "monitor and modify") or by taking a more active approach such as setting up field manipulations to test competing hypotheses. It is beyond the scope of this SAB report to develop a comprehensive list of alternative hypotheses for Lake Erie eutrophication. However, the SAB suggests the following list of issues that might be considered, along with the accompanying research, monitoring and modeling tasks that would be useful for addressing each issue. The SAB offers these as a starting point for further consideration and prioritization by the adaptive management committee. As part of this process, it would be instructive for the adaptive management committee to consider what the potential management response might be if a given alternative is found to be important.

Loading

It is not clear how effective BMPs applied at different times and places in the watershed will be for reducing P, nor is it understood whether BMPs directed at P-retention will be effective for N removal.

Research, monitoring and modeling:

- Characterize BMPs with respect to the geochemical form of nutrient runoff addressed, spatial distribution, type of BMP and life cycle effectiveness.
- Compare N runoff in areas using different BMPs targeted at P control.
- Conduct small-scale experiments that quantify the efficiency of BMPs for reducing both P and N.
- Link watershed models to in-lake models and run a suite of scenarios to evaluate the effectiveness of using different combinations of BMPs over space and time.

Cyanobacteria

The timing and magnitude of cyanobacterial blooms may be affected by the stoichiometric balance of N and P in resource supply because algal growth and nutrient demand can generate conditions where N and P become co-limiting. In addition, it is important to understand the linkage between cyanobacterial biomass and toxin production in order to effectively address the potential effects of blooms.

Research, monitoring and modeling:

- Calculate N loading to compare with P (including N:P ratios) and bioavailable forms of N and P.
- Monitor key N constituents in the tributaries.
- Run N scenarios in models; potentially develop new models.
- Evaluate the seasonal timing of N loading.
- Consider conducting *in situ* experiments (limno-corrals) to evaluate N limitation in the field.

- Measure toxins in a standardized, coordinated way.
- Evaluate correlations between particulate organic carbon (POC), chlorophyll a, cyanobacteria and microcystin concentration.
- Develop models to explore relationships between P, N, phytoplankton community composition and implications for toxins.

Hypoxia

A number of factors contribute to the potential for oxygen depletion and hypoxia in the Lake, including the duration and magnitude of spring diatom blooms, the seasonal progression of stratification, and the extent of sediment oxygen demand. Although many of these factors are incorporated in current models, it would be useful to improve our understanding of the relative importance of these drivers and their relationship to external nutrient loads.

Research, monitoring and modeling:

- Quantify diatom bloom magnitude and duration.
- Evaluate relationship between diatoms and seasonal N, P and silicon (Si) loading.
- Use models and empirical analyses to evaluate relationship between diatoms and hypoxia.
- Run model scenarios with varying stratification for a given P load.
- Expand models to include mechanistic processes to represent sediment nutrient diagenesis and fluxes of inorganic nutrients and sediment oxygen demand.
- Collect site-specific data to support the development and calibration of models of nutrient diagenesis and fluxes of inorganic nutrients and sediment oxygen demand.

Cladophora

Cladophora standing crop and productivity may be linked to internal P release from hypoxic sediments or near-shore sources of P. In addition, the role of dreissenid mussels in promoting *Cladophora* proliferation is unclear.

Research, monitoring and modeling:

- Monitor near-surface suspended sediment concentrations to characterize the upper active mixed layer in the Western Basin.
- Improve on current *Cladophora* modeling to include nearshore processes.
- Monitor dreissenid populations in the Central and Eastern Basins
- Compare light levels, N and P release in dreissenid beds (with and without *Cladophora* removed) and control areas.

5. Future scenarios should be evaluated. Part of the reason that the loading targets for P are being re-evaluated is because of the changing response of the Lake over the past few decades. As part of the adaptive management process, it will be important to understand the effects of climate variability and other factors that may change in the future (Smith et al. 2015). The SAB recommends that the adaptive management committee: (a) evaluate recent trends in the relationships between loading and ERIs for evidence of increasing sensitivity or changes in seasonality (e.g., March-July) or spatial patterns, and (b) develop a suite of future scenarios that can be explored using models.

Potential scenarios that could be evaluated include:

- Climate change: increased precipitation and discharge; increased temperature; shorter duration of ice cover.
- Anticipated changes in land use and population density.
- Regional economic development.
- Zero P input: (i.e., with no additional load, how long will it take for internal stores of P to run out?). This is not so much an anticipated future scenario as a way to establish an end member.
- Combinations of the above that use integrated modeling approaches (e.g., combining watershed landscape and hydrology models with Lake models).

6. The work proposed here should be structured to provide answers to the following questions on an ongoing basis:

- Are load reduction targets being met?
- Are ERI's responding?
- Are ERI's being predicted accurately? If not, what alternative factors need to be considered?
- Are there additional management measures that need to be considered based on additional understanding gained from evaluating alternative hypotheses?
- Which environmental and land use conditions are changing or likely to change in the future? If so, what implications would such changes have for management?

In order to be in a position to address these questions the SAB recommends that the adaptive management committee meet regularly and establish concrete targets for identifying key variables to be monitored; deciding which alternative hypotheses are most important and what models/data are needed to evaluate them; and agreeing on forecasting scenarios. This requires a long-term institutional commitment to the process at the local and regional levels.

Key Recommendations

Short Term:

- A standing adaptive management committee should be appointed to develop a program that investigates alternative hypotheses and long-term forecasts in order to inform future management decisions.
- A coordinated binational long-term monitoring strategy should be developed. A standardized monitoring protocol should be implemented among the different groups involved. The same assessment approaches should be applied to tributary monitoring data for N and P to evaluate efforts to control sources of nutrient loadings.
- Alternative management actions for Lake Erie eutrophication should be identified and evaluated if loading reductions fail to produce the desired management objectives.

- Recommended models should be used as part of the adaptive management process to identify and evaluate alternative hypotheses. The models can also be used to identify data gaps and to run future scenarios.
- Future scenarios should be evaluated to understand the effects of climate variability and other factors that may change in the future.
- The proposed work should be structured to provide answers to key questions (e.g., are load reduction targets being met, are ERIs responding, are ERIs being predicted accurately) on an ongoing basis.
- The effectiveness of BMPs should be characterized with respect to type, spatial location in the watershed, and life cycle effectiveness.

Intermediate Term:

- Detailed information on the implementation of P reduction strategies in each major watershed should be collected into the future (e.g., the areas of the landscape where strategies are being implemented and P monitoring data showing trends in those areas).

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APPENDIX A: THE EPA'S CHARGE QUESTIONS

Background

EPA Region 5 is co-leading a binational workgroup to develop and implement the Nutrients Annex (“Annex 4”) of the 2012 Great Lakes Water Quality Agreement (GLWQA) in accordance with Article 3(b)(i) of the GLWQA. Under Annex 4, the U.S. and Canada committed to address eutrophication issues in Lake Erie by first establishing phosphorus objectives, loading targets and allocations for the nearshore and offshore waters by February 2016, and subsequently develop phosphorus reduction strategies and domestic action plans by 2018. A binational workgroup of Lake Erie scientists used a suite of models to generate a series of load response curves in order to simulate the impact of phosphorus loads to cyanobacteria biomass, hypoxia and *Cladophora* growth, and identify the phosphorus reductions needed to meet the desired ecological condition for the Lake. EPA sought early SAB advice on the modeling approach in December 2014. The SAB’s feedback was considered in the subsequent deliberations by the binational workgroup, and resulted in improved documentation of the uncertainties and sensitivities of the models. The U.S. and Canada released the recommended binational phosphorus reduction targets in June 2015 and sought public input during July and August. The phosphorus load reduction targets were accepted by the U.S. and Canada on February 22, 2016, as follows:

To minimize the extent of hypoxic zones in the waters of the central basin of Lake Erie: a 40 percent reduction from 2008 loads in total phosphorus entering the western basin and central basin of Lake Erie – from the United States and from Canada – to achieve a 6,000 metric ton central basin load. This amounts to a reduction from the United States and Canada of 3,316 metric tons and 212 metric tons, respectively.

To maintain algal species consistent with healthy aquatic ecosystems in the nearshore waters of the western and central basins of Lake Erie: a 40% percent reduction in spring total and soluble reactive phosphorus loads from the following watersheds where localized algae is a problem: in Canada, the Thames River and Leamington tributaries; and in the U.S., the Maumee River, the River Raisin, the Portage River, Toussaint Creek, the Sandusky River, and the Huron River, OH.

To maintain cyanobacteria biomass at levels that do not produce concentrations of toxins that pose a threat to human or ecosystem health in the waters of the western basin of Lake Erie: a 40 percent reduction in spring total and soluble reactive phosphorus loads from the Maumee River in the U.S.

Further reductions in phosphorus may be necessary to address benthic nuisance algal growth and shoreline impacts in Lake Erie’s eastern basin. The Annex 4 Objectives and Targets Task Team will meet later this year to reconsider the viability of developing a target for the eastern basin, given the current state of the science on *Cladophora* and recent updates to the *Cladophora* growth model.

EPA is currently working with other federal, state and Canadian partners to develop a long-term plan that will identify the monitoring, data and analyses needed to support implementation and evaluation of these nutrient reduction goals as part of an ongoing, adaptive management approach. We are also

working to develop a binational phosphorus reduction strategy and domestic action plans which will outline actions to be taken to achieve the targets.

Furthermore, a binational task team was formed under Annex 4 to initiate steps required to develop Lake Ontario nutrient targets. That team is currently assessing the status of nutrients and eutrophication impacts in Lake Ontario, identifying gaps in monitoring and modeling needed to support targets development. The Lake Ontario Nutrients Task Team will benefit from lessons learned and consideration of modeling approaches in Lake Erie.

Charge to SAB:

The EPA requests Science Advisory Board (SAB) review of the current modeling results and other information used to inform development of the binational phosphorus reduction targets. We are seeking a critical review so that we can ensure the Agency's ongoing efforts to develop, implement and evaluate nutrient reduction goals for Lake Erie are based on sound scientific data, analyses, and interpretations. In a spirit of adaptive management, we are most interested in SAB advice on enhancements to the modeling approach, or new approaches to consider, that will help us proactively manage eutrophication issues in Lake Erie in the long term.

Review Documents: The panel will review the following documents, which taken together explain the process followed to develop the binational phosphorus loading targets for Lake Erie:

- The Annex 4 Ensemble Modeling Report and Appendix B
- *Recommended Phosphorus Loading Targets for Lake Erie: Annex 4 Objectives and Targets Task Team Final Report to the Nutrients Annex Subcommittee. May 11, 2015*

Additional Documents: The following documents (and associated references), provide important context and information related to our current efforts:

- A Multi-Model approach to evaluating target phosphorus loads for Lake Erie. Scavia, DePinto and Bertani. *Journal of Great Lakes Research*, in press.
- *State of Knowledge of Cladophora in the Great Lakes. Executive Summary of Workshop held at NOAA-Great Lakes Environmental Research Laboratory January 26-28, 2016*

Charge Questions:

Approach for Developing Lake Erie Phosphorus Load Reduction Targets

Nine different Lake Erie models were used to predict the response of selected eutrophication response indicators to different phosphorus load scenarios (see Table 1 in the Annex 4 Ensemble Modeling Report). The eutrophication response indicators evaluated were (1) overall phytoplankton biomass represented by chlorophyll a, (2) cyanobacteria blooms in the Western Basin, (3) hypoxia in the hypolimnion of the Central Basin, and (4) *Cladophora* in the nearshore areas of the Eastern Basin. Technical evaluation criteria were used to assess the capabilities of each model (see Section 2.3 and Appendix B of the Annex 4 Ensemble Modeling Report) and load-response curves were generated for each eutrophication response indicator (see Section 3 and Appendix B of the Annex 4 Ensemble Modeling Report).

1. Please comment on whether the evaluation of the models was adequate to inform how model results should be interpreted, given differences in model complexity and scale. Please identify any additional analyses that may be needed to improve future development and interpretation of the load-response curves for the eutrophication response indicators.

The document, *Recommended Phosphorus Loading Targets for Lake Erie* describes the process followed by the Annex 4 Objectives and Targets Task Team to develop phosphorus loading targets for Lake Erie. The document indicates that, to achieve a Western Basin cyanobacteria bloom biomass threshold no greater than that observed in 2004 or 2012, 90% of the time, a spring Maumee River load of 860 metric tons of total phosphorus and 186 metric tons of dissolved reactive phosphorus is recommended. In addition, a 40% reduction in the spring load of total phosphorus and dissolved reactive phosphorus from other Western Basin tributaries and the Thames River is recommended. To meet a threshold of 2.0 mg/L or higher of hypolimnetic dissolved oxygen, an annual total phosphorus load of 6,000 metric tons to the Western and Central Basins is recommended. The Task Team did not recommend new phosphorus concentration objectives for the open waters or the nearshore be identified at this time.

2. Please comment on whether the recommended targets reflect the best available information on the drivers of cyanobacteria growth and seasonal hypoxia in Lake Erie and are appropriate to meet the nutrient Lake Ecosystem Objectives defined in the GLWQA (as reflected in Table 1 on page 7 of the document titled *Recommended Phosphorus Loading Targets for Lake Erie*).

***Cladophora* Growth**

Additional phosphorus load reductions may be necessary to reduce nuisance levels of *Cladophora* in the nearshore waters of the Eastern Basin of Lake Erie. The Annex 4 Objectives and Targets Task team did not recommend a specific phosphorus objective or loading target to address *Cladophora* growth. EPA and Environment and Climate Change Canada convened a workshop in January 2016 to assess the current state of knowledge of *Cladophora* growth in the Great Lakes and identify potential options for nutrient target development to be considered by the Annex 4 subcommittee. (Please see the background document titled “State of the Knowledge of *Cladophora* in the Great Lakes. Executive summary of Workshop held at NOAA-Great Lakes Environmental Research laboratory, January 26-28, 2016.”)

3. Please comment on whether scientifically-sound phosphorus load reduction recommendations to address *Cladophora* growth in the Eastern Basin of Lake Erie could be developed at this time.

Nitrogen Control

While the current strategy focuses on limiting phosphorus loading to the Lake (total and dissolved forms) as the key mechanism for controlling excessive algal growth, it is implied or assumed that nitrogen loading likely will also be reduced through implementation of agricultural best management practices, and the Task Team recommended that tributary nitrogen loads to the Lake be tracked in addition to phosphorus.

- 1 4. What recommendations can the SAB provide for development of an approach to help determine
2 whether consideration of nitrogen control, in addition to phosphorus, is warranted in Lake Erie to
3 prevent harmful algal blooms and manage hypoxia? In particular, what questions, relationships, or
4 research priorities related to nitrogen loading (different forms and sources) and in-lake cycling
5 must be addressed?
6

7 **Evaluation of Nutrient Reduction Targets**
8

9 The inter-annual loading trends for the Maumee River are greatly influenced by annual variability in
10 flows. The Objectives and Targets Task Team identified a maximum flow below which the target
11 load should be met and recommended the use of flow-weighted mean concentrations (FWMC) as a
12 benchmark for any given tributary target load.
13

- 14 5. Please comment on the use of FWMC and any other approaches that should be considered to
15 account for inter-annual variability in hydrology in assessing progress in reducing tributary
16 loadings of phosphorus to the Lake.
17

18 The Task Team recommended development of a comprehensive adaptive management program that
19 would include annual routine monitoring of appropriate load, FWMC, and in-lake nutrient-
20 eutrophication response indicators in conjunction with an intensive monitoring, research, and
21 operational model application program every five years.
22

- 23 6. Please comment on the value of applying the existing eutrophication models on an ongoing basis
24 to periodically evaluate phosphorus loading targets and eutrophication response indicators. What
25 key elements should be included in the adaptive management approach to successfully implement
26 and evaluate our nutrient reduction goals for Lake Erie?
27
28
29
30

Southeastern Pennsylvania Nutrient Coalition



June 6, 2017

VIA EMAIL & FIRST CLASS U.S. MAIL

Mr. E. Scott Pruitt
Administrator
U.S. Environmental Protection Agency Headquarters
William Jefferson Clinton Building
1200 Pennsylvania Avenue, N.W. – Mail Code 1101A
Washington, DC 20460

RE: Request for Peer Review of EPA Region 3's TMDL Nutrient Endpoint Report

Dear Administrator Pruitt:

On behalf of the Southeastern Pennsylvania Nutrient Coalition of boroughs, townships, and wastewater treatment authorities (including Telford Borough, Telford Borough Authority, Lower Salford Township Authority, Lower Salford Township, Souderton Borough, Franconia Township, Franconia Sewer Authority, Abington Township, Newtown Township, Hatfield Township and Westchester), we request a meeting to discuss EPA Headquarters' coordination of an independent peer review of a document entitled *Development of Nutrient Endpoints for the Northern Piedmont Ecoregion of Pennsylvania: TMDL Application – Follow-Up Analysis* ("TMDL nutrient endpoint report"). See attached Ex. 1. As outlined below, we believe this EPA document creating stringent nutrient reduction requirements for Eastern PA waters is not scientifically defensible and single-handedly misallocates hundreds of millions of dollars in municipal funds towards unnecessary construction of wastewater and stormwater facilities. As noted in *Presidential Executive Order on Promoting Energy Independence and Economic Growth*, these are precisely the type of regulatory decisions that should be peer-reviewed:

It is also the policy of the United States that necessary and appropriate environmental regulations comply with the law, are of greater benefit than cost, when permissible, achieve environmental improvements for the American people, *and are developed through transparent processes that employ the best available peer-reviewed science and economics.*

(signed March 28, 2017) (emphasis added). As conscientious stewards of the environment, we remain fully committed to water standard compliance and dedicating our limited resources towards expenditures that will achieve this goal. However, we have serious concerns that this document, and the exorbitant costs that it will impose by its use, will achieve such ends. Therefore, we believe that a thorough independent review of the document should be conducted.

Southeastern Pennsylvania Nutrient Coalition

Background

The TMDL nutrient endpoint report was originally developed in 2007 by TetraTech for EPA Region 3. The 2007 report was subsequently updated by TetraTech in 2012 to address comments made by the EPA Science Advisory Board (SAB, 2010) critical of the stressor-response evaluations contained in the original report. *See* Ex. 2, EPA's 2010 Peer Review Report. Despite a harsh rebuke from the SAB that undercut the central presumption underlying the TMDL nutrient endpoint report, EPA and TetraTech concluded in the follow-up report that the 40 µg/l total phosphorus ("TP") stream endpoint target developed in the 2007 report is still scientifically defensible and will ensure compliance with Pennsylvania's narrative criteria for nutrients (e.g., protection of aquatic life). Once developed, these reports served as the linchpin determination to impose the same 40 µg/l TP stream endpoint target in nutrient TMDLs for several southeastern Pennsylvania free flowing streams (e.g., Indian Creek, Goose Creek, Wissahickon Creek, Southampton Creek). Many of these TMDLs have been heavily contested and/or are currently being litigated in Federal Court. *See, e.g., Telford Borough Authority v. EPA*, (E.D.P.A. 12-6548); *West Goshen Sewer Authority v. EPA*, (E.D.P.A. 12-5353).

Major Scientific Flaws

While each of the entities in our group have site-specific concerns with application of the 40 µg/l TP target in their watershed, the following major technical flaws apply generally to all watersheds:

- Available data for these watersheds confirm that high levels of plant growth (periphyton) are occurring independent of TP concentrations (*i.e.*, no relationship between the two parameters). Accordingly, even if hundreds of millions of dollars are spent in an effort to meet the 40 µg/l TP target, there will be no resulting benefit to the aquatic ecosystems of these watersheds.
- Contrary to the nonexistent relationship between TP and periphyton in the available data, there is a strong relationship between periphyton growth and canopy cover. *See* Ex. 3, PADEP Memorandum by Alan Everett on Periphyton Standing Crop in Wissahickon Watershed. The data confirm that increasing canopy and restoring the riparian zone would be far more effective – not to mention cost-effective – in reducing plant growth.¹
- Numerous scientific studies – even some developed by EPA's experts – confirm that periphyton control via TP reduction is virtually impossible, except at extremely low levels of TP that are not attainable in these watersheds (less than 10 µg/l TP). *See* Ex. 4, Dodds Report (at 677).

¹ On multiple occasions, our group has requested to implement a stream restoration proposal in lieu of the TMDL reductions. EPA Region III has denied each of these proposals.

Southeastern Pennsylvania Nutrient Coalition


- The majority of southeastern Pennsylvania streams are heavily populated and urbanized. Accordingly, the upstream background concentrations of TP are elevated well beyond the 40 µg/l target and would make compliance with that endpoint infeasible – even if phosphorus was entirely eliminated from the wastewater and stormwater discharges. It is inappropriate to regulate in a manner that causes enormous energy and financial costs with no benefit. *See Michigan v. EPA*, 135 S. Ct. 2699, 2707 (2015) (“No regulation is ‘appropriate’ if it does significantly more harm than good.”).
- The TMDL nutrient endpoint report is directly at odds with an earlier SAB review finding that such generalized analyses for developing nutrient endpoints are not scientifically defensible. *See Ex. 2, SAB Peer Review Report*, at 38 (“Numeric nutrient criteria developed and implemented without consideration of system specific conditions (e.g., from a classification based on site types) can lead to management actions that may have negative social and economic and unintended environmental consequences without additional environmental protection.”)

Peer Review Request

As noted in the recent executive order, it is crucial that our federal regulatory programs be based on sound decision-making and good science – not guesswork or generalized one-size-fits-all approaches that misdirect limited resources to unnecessary or unhelpful measures. This is particularly true in the realm of nutrients, where EPA has been seeking to regulate nutrients at all times and all places, regardless of what the data show or the ability to actually control the situation. *See, e.g., Ex. 5, SAB’s Draft Peer Review of TP limits in Lake Erie to regulate Cladophora.*

As several hundred million dollars in wastewater and stormwater compliance costs could easily be triggered by this one report, we believe that a second peer review, to supplement the 2010 SAB review, would be a reasonable and prudent means to ensure that our resources are being appropriately expended. We look forward to meeting with you and further discussing this request.

Sincerely,



Mark D. Fournier
on behalf of the Southeast Pennsylvania
Nutrient Coalition

Enclosures

cc: Sarah Rees, USEPA
Sarah A. Greenwalt, USEPA
Troy Lyons, USEPA

Southeastern Pennsylvania Nutrient Coalition

Justin Schwab, Esq., USEPA
Donald Benton, USEPA
Senator Pat Toomey
Senator Bob Casey
Congressman Ryan Costello
Congressman Pat Meehan
Congressman Bill Shuster
Congressman Brian Fitzpatrick
Congressman Brendan Boyle

Southeastern Pennsylvania Nutrient Coalition



June 6, 2017

VIA EMAIL & FIRST CLASS U.S. MAIL

Senator Pat Toomey
Senator Bob Casey
Congressman Ryan Costello
Congressman Pat Meehan
Congressman Bill Shuster
Congressman Brian Fitzpatrick
Congressman Brendan Boyle

RE: Request for Congressional Support for Peer Review of EPA Region 3's Nutrient Endpoint Report

Dear Senators and Congressmen:

On behalf of the Southeastern Pennsylvania Nutrient Coalition (including Telford Borough, Telford Borough Authority, Lower Salford Township Authority, Lower Salford Township, Souderton Borough, Franconia Township, Franconia Sewer Authority, Abington Township, Newtown Township, Hatfield Township and Westchester), we are seeking support of our Coalition's request to have EPA conduct an independent peer review of a nutrient endpoint report that EPA is using to impose stringent nutrient reduction mandates throughout eastern Pennsylvania. *See*, Peer Review Request. As discussed in the Coalition's peer review request, this document is single-handedly misallocating hundreds of millions of dollars of municipal expenditures throughout southeastern Pennsylvania. We are asking your help to avoid this waste of limited state resources.

While our communities are more than willing to pay for watershed improvement efforts that will produce meaningful environmental benefits where mandated by state or federal law, our reviews have determined that (1) the nutrient reductions driven by this document will be meaningless in improving the conditions in our local streams/creeks, and (2) less costly canopy restoration is the only way to eliminate the excess periphyton growth. Unfortunately, despite numerous requests based on these findings, EPA has been unwilling to withdraw its nutrient reduction mandates that are based on this nutrient endpoint report.

Accordingly, the requested peer review is the only way – aside from litigation – that the Agency will modify its position. For instance, in 2009, a similar Pennsylvania Congressionally-supported peer review request triggered an independent peer review by EPA's Science Advisory Board. That action proved to be instrumental in getting the Agency to withdraw/revise a

Southeastern Pennsylvania Nutrient Coalition

similarly flawed nutrient guidance document, following the Science Advisory Board's conclusion that EPA's approach was not scientifically defensible. While we anticipate a similar result if an independent peer review were to be granted for this document, we are, nonetheless, willing to live with the results of an independent review, regardless of the outcome.

Therefore, we respectfully request your offices support for this peer review request. Thank you for any assistance you can provide that will assure Pennsylvania's resources are wisely expended.

Sincerely,



Mark D. Fournier
on behalf of the Southeast Pennsylvania
Nutrient Coalition

Enclosure

To: jackson.ryan@epamail.epa.gov[jackson.ryan@epamail.epa.gov];
dravis.samantha@epamail.epa.gov[dravis.samantha@epamail.epa.gov]
From: Nick Owens
Sent: Mon 6/5/2017 3:12:39 PM
Subject: Meeting Request w/ Administrator & Mercuria Energy Group CEO
[EPA Letter Jaeggi Sherk.pdf](#)
[Sherk Bio-2017 \(002\).pdf](#)
[Daniel Jaeggi_Mercuria.pdf](#)

Hi Ryan and Samantha:

I hope all's well -- you all have definitely hit the ground running!

Please see the attached meeting request sent to the Exec Sec for the Secretary on June 15th from Mercuria Energy Group, US based in Houston, TX.

Please let me know who the scheduler is; I'll circle back with them and I wanted to bring this request to your attention.

A few key facts on Mercuria below.

Thank you for your consideration.

All the best,
Nick

Ex. 6 - Personal Privacy m

[Mercuria Energy Group]

-Daniel Jaeggi - Founder
Largest Crude Oil Trader

-Purchased JP Morgan Chase commodities unit

-Transacted first export of American crude to China

-Finding more way to make America an energy exporter and making China the consumer

-Employs 1,000 US; revenues \$100 Billion

Global HQ: Geneva, Switzerland

US Operations HQ: Houston TX

Significant operations in Oklahoma and Colorado

To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Greenwalt, Sarah[greenwalt.sarah@epa.gov]
From: Jay Martin
Sent: Mon 6/5/2017 2:36:52 PM
Subject: Re: CWA permits

Thanks, I just reached out to HQ and we will be in touch shortly.
Appreciate your attention.
Jay

On Jun 5, 2017, at 9:30 AM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Jay, can you send us information on the CWA permits your working with the Agency to get?

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy

To: Pruitt, Scott[Pruitt.Scott@epa.gov]
Cc: Jackson, Ryan[jackson.ryan@epa.gov]
From: Maria Zuber (sent by Paul R Schierenbeck)
Sent: Wed 6/7/2017 6:47:22 PM
Subject: correspondence from MIT Vice President for Research Zuber
MTZ Pruitt letter 06_07_2017.pdf
MIT Paris Agreement statement 06_01_2017.pdf

Please see the attached letter and attachment from VPR Maria T. Zuber. Thank you,

/PRS

Paul R. Schierenbeck

Executive Assistant to Maria T. Zuber

Massachusetts Institute of Technology | Office of the Vice President for Research

77 Massachusetts Ave 3-234 | Cambridge MA 02139

schieren@mit.edu | (617) 324-8177

Attachment 1

111

MIT issued the following statement on Thursday, June 1, 2017.

MIT

A set of talking points circulated in support of President Trump from the Paris Agreement included this statement:

MIT

"The [Paris] Agreement has a little for the climate

MIT

"According to researchers at MIT, if all member nations met climate would be negligible. The impacts have been estimated temperature rise by less than 1°C in 2100."

MIT

The researchers in MIT's Joint Program on the Science and relevant analysis find this statement to be no reasons.

MIT

First, the 1.5°C target agreed in the Paris Agreement compared with the earlier 2°C target. The Paris Agreement impact of the Paris Agreement to no climate policy, then larger, on the order of 1.5°C less than 1°C. This would significant reduction in the global temperature rise, though much to achieve its goal of limiting warming to 2°C degrees Celsius.

MIT

Second, the analysis by 195 countries' pledges under the Paris Agreement no further strengthening of the commitments in years after the milestone of the ongoing UN Framework Convention on Climate Change ongoing meetings to regularly revisit and ratchet up nations' more ambitious over time.

MIT

The relevant MIT researchers believe that the Paris Agreement effort by nearly 200 countries to act to reduce global temperature.

MIT

###

MIT



Maria T. Zuber

Vice President for Research

E. A. Griswold Professor of Geophysics

77 Massachusetts Avenue, Building 3231
Cambridge, Massachusetts 02139-4307

Phone 617-253-3206

Email mtz@mit.edu

???

???

June 22, 2016

???

???

???

The Honorable Scott Pruitt

Administrator

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue

Washington, DC 20460

???

Dear Administrator Pruitt:

???

As you know, last week the White House circulated a memo referring to talking points to information from a 2015 study from MIT's Joint Program on the Science Change to President Trump's decision to withdraw the United States from the Paris Agreement. The relevant researchers at MIT have witnessed the way these talking points presented the information attaching the agreement outlining these concerns.

I write today regarding a letter I received from Fox News Sunday on June 4, 2016, in which an exchange with host, Chris Wallace, in which Mr. Wallace challenged the way the White House presented the information from the 2015 study. "Look, it's very fishy to me that MIT updated its study started the change."

This simply not the case. The information in the White House talking points is the Joint Program 2015 Energy and Climate Outlook report, which has been updated annually. But the most recent version released in September 2015, is not what

I am troubled by suggestion that our researchers altered a published study in a political debate. This did not happen: No such updates were made. The versions of the Outlook that are available to the public are exactly the same documents that were available to the public a week ago.

???

???

???

¹ The 2016 Outlook is available at <http://globalchange.mit.edu/publications/signature/2016/Food-Water-Energy-Climate-Outlook>.

???

Pruitt Page 11

???

MIT takes research integrity extremely seriously. I was contacted by you before making any comment, and we would have been pleased to provide you with any information. I encourage you to feel free to contact my office anytime about MIT's research, or if you need any other information about climate science and

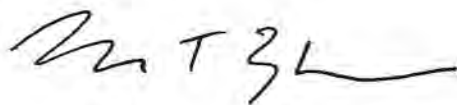
Through rigorous, careful study, scientists at MIT have found that an overwhelming body of evidence that climate change is real, that human activity causes it, and that it poses substantial risks to generations.

???

I invite you to visit our campus, coming from MIT, to meet with students, faculty, and researchers who are helping to better understand this global challenge and how we might address it. In the meantime, I think you will find our 2016 comprehensive and vital resource.

???

Sincerely,???



???

Maria Zuber

???

cc: Mr. Ryan Jackson

Chief of Staff

Office of the Administrator

U.S. Environmental Protection Agency

1200 Pennsylvania Avenue

Washington, DC 20460

???

Attachment

???

???

???

???

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Jay Martin
Sent: Mon 6/5/2017 2:30:58 PM
Subject: Automatic reply: CWA permits

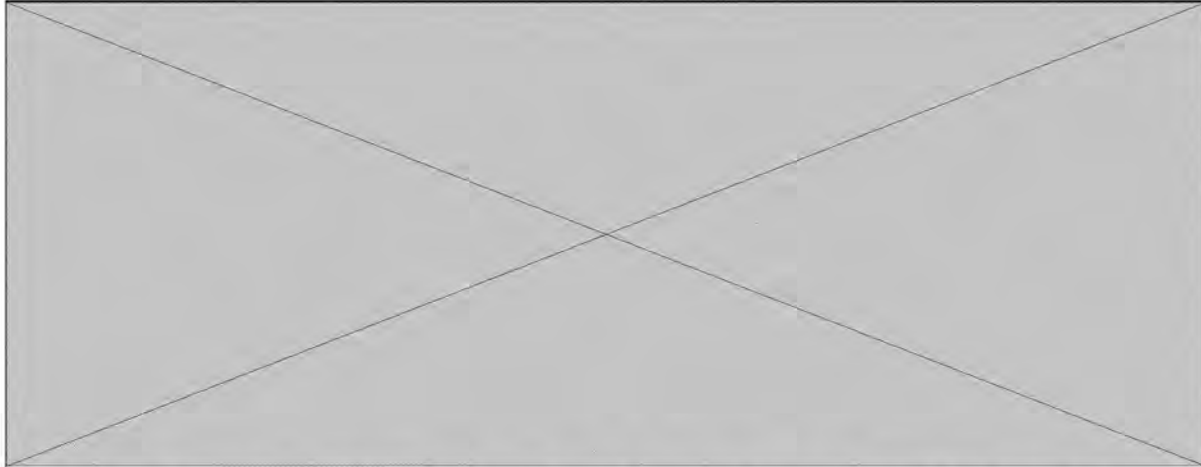
I am out of the office and will return on June 12, 2017. If this is timely, please call my cell phone
at Ex. 6 - Personal Privacy

Thanks,
Jay

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Sarah Phillips
Sent: Wed 6/7/2017 5:44:21 PM
Subject: Which stage are you in?

4 Stages to Building a Corporate Culture that Amplifies Execution

Wednesday, June 21 @ 1pm ET | [Register now!](#)



Nearly 65% of organizations have an agreed-upon strategy, yet only 25% are successfully executing upon those strategies.

Corporate culture is often overlooked as a critical driver of organizational success. But if you want to achieve **optimal execution**, having an organizational culture that amplifies execution and results is key.

Join us **Wednesday, June 21st** for a journey through the four stages of cultural evolution. You'll identify where your organization currently stands and strategies that will help you make a transformative impact on your organization's success.

[**REGISTER NOW**](#)

You will learn:

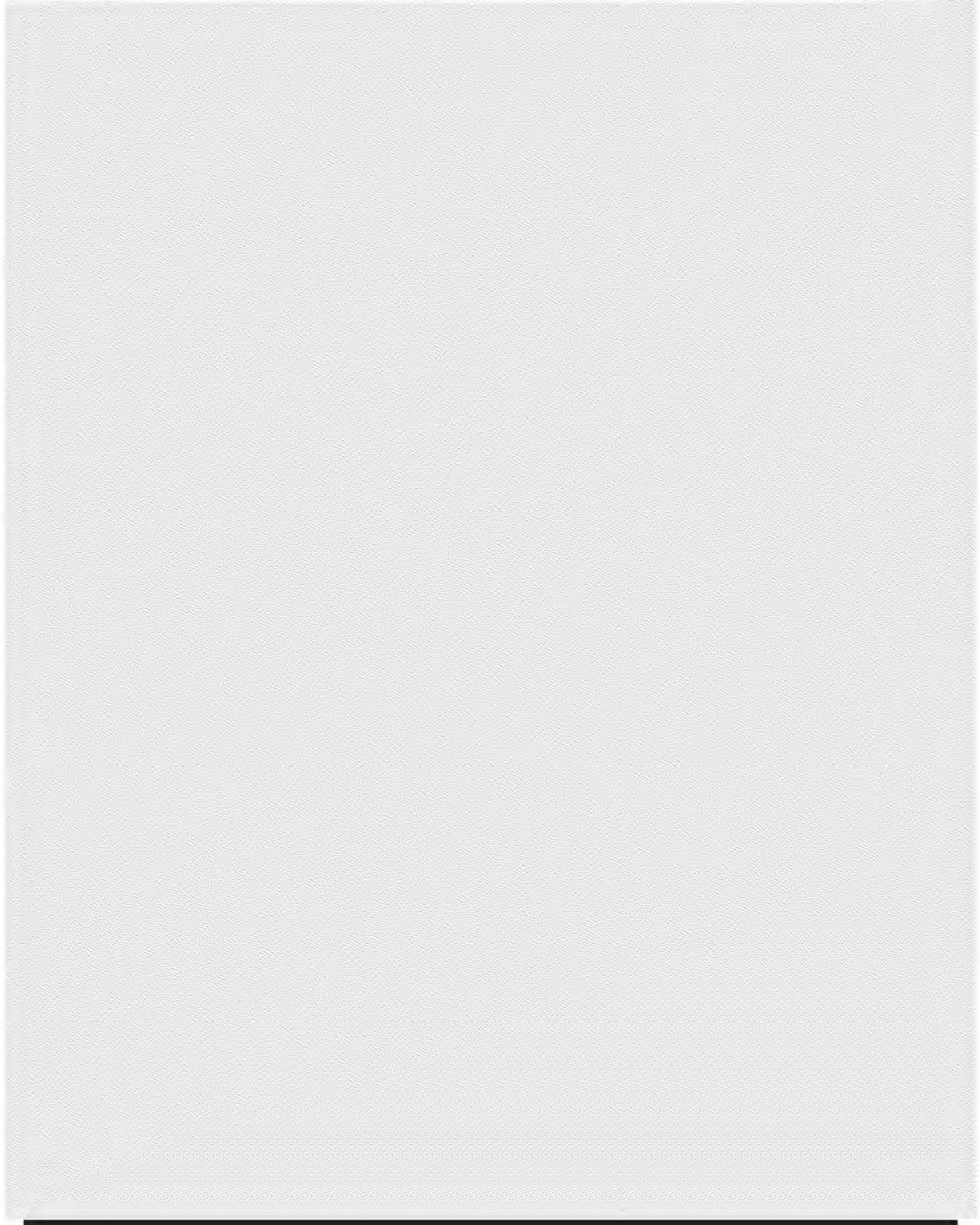
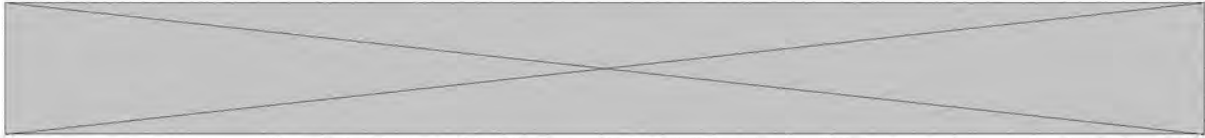
- The 4 stages of cultural evolution
- How to identify which stage your organization is in
- Tips to progress through each stage

Speaker:

Joseph Krause

Date/Time:

Wednesday, June 21
1:00pm ET



[Edit your email preferences.](#)

<http://www2.achievet.com/e/147781/oter-utm-content-Demo20Request/25bnr4/152274959>

<http://www2.achievet.com/e/147781/0Footer-utm-content-Home20Page/25bnr6/152274959>

<http://www2.achievet.com/e/147781/GoAchieveIt/25bnr8/152274959>

<http://www2.achievet.com/e/147781/goachievet/25bnrb/152274959>

<http://www2.achievet.com/e/147781/company-achievet/25bnrd/152274959>

To: Bennett, Tate[Bennett.Tate@epa.gov]
Cc: Jackson, Ryan[jackson.ryan@epa.gov]
From: Don Parrish
Sent: Wed 6/7/2017 5:31:57 PM
Subject: Re: EPA to Extend Deadline for 2015 Ozone NAAQS Area Designations

Thanks for reaching out and the notification.

Don

Sent from my iPhone

On Jun 6, 2017, at 8:11 PM, Bennett, Tate <Bennett.Tate@epa.gov> wrote:

FYI, Don! Let us know if you have any questions.

Begin forwarded message:

From: "Milbourn, Cathy" <Milbourn.Cathy@epa.gov>
Date: June 6, 2017 at 6:35:34 PM EDT
To: "Bennett, Tate" <Bennett.Tate@epa.gov>, "Konkus, John" <konkus.john@epa.gov>
Subject: EPA to Extend Deadline for 2015 Ozone NAAQS Area Designations

CONTACT:
press@epa.gov

FOR IMMEDIATE RELEASE
June 6, 2017

EPA to Extend Deadline for 2015 Ozone NAAQS Area Designations

WASHINGTON – U.S. Environmental Protection Agency (EPA) Administrator Scott Pruitt sent a letter to governors today to inform them of EPA's efforts related to the National Ambient Air Quality Standards (NAAQS) for ozone promulgated in

October 2015. EPA is extending the deadline for promulgating initial area designations, by one year, for the 2015 ozone NAAQS.

“States have made tremendous progress and significant investment cleaning up the air. We will continue to work with states to ensure they are on a path to compliance,” **said Administrator Scott Pruitt.**

The National Ambient Air Quality Standard (NAAQS) for ground-level ozone is an outdoor air regulation under the Clean Air Act. As part of the process to determine what areas of the country are able to meet the current air quality standards, states are currently submitting their proposals for area designations under the 70 parts per billion (ppb) standard, which was lowered from 75 ppb in 2015. Areas designated as being in “nonattainment” of the standard face consequences, including: increased regulatory burdens, restrictions on infrastructure investment, and increased costs to businesses.

EPA is giving states more time to develop air quality plans and EPA is looking at providing greater flexibility to states as they develop their plans. And, pursuant to the language in the recently-enacted FY2017 Omnibus funding bill, Administrator Pruitt is establishing an Ozone Cooperative Compliance Task Force to develop additional flexibilities for states to comply with the ozone standard.

Additionally, the Agency is taking time to better understand some lingering, complicated issues so that air attainment decisions can be based on the latest and greatest information. This additional time will also provide the agency time to review the 2015 ozone NAAQS, prior to taking this initial implementation step.

Although the new ozone standard was set on October 1, 2015, there remains a host of complex issues that could undermine associated compliance efforts by states and localities. The Agency is evaluating these issues, primarily focused on:

- Fully understanding the role of background ozone levels;
- Appropriately accounting for international transport,
- And, timely consideration of exceptional events demonstrations.

“We share the goal of clean air, a robust economy and stronger, healthier communities. We are committed to working with states and local officials to effectively implement the ozone standard in a manner that is supportive of air quality improvement efforts without interfering with local decisions or impeding economic growth,” **said Administrator Pruitt.**

Since 1980, total emissions of the six principal air pollutants have dropped by 63 percent and ozone levels have declined by 33 percent. Despite the continued improvement of air quality, costs associated with compliance of the ozone NAAQS have significantly increased.

R107

If you would rather not receive future communications from Environmental Protection Agency, let us know by clicking [here](#).
Environmental Protection Agency, 1200 Pennsylvania Avenue NW, Washington, DC 20460 United States

<AZ Ducey 6-6-17.pdf>

To: Ryan Jackson[Ex. 6 - Personal Privacy] Jackson, Ryan[jackson.ryan@epa.gov]
From: Melissa Shute
Sent: Wed 6/7/2017 4:56:16 PM
Subject: catch up

I know you are swamped with everything circulating about Paris, but curious if you were around to catch up for coffee or drinks this week or next.

Melissa Shute
Senior Director Political & Public Affairs
CCOM PPAG WA

Mobile: [Ex. 6 - Personal Privacy]
Telephone: +1 202 370 5213
Email: mshut@statoil.com

Visitor address: 1050 K. St. NW, Suite 950, Washington, DC 20001, United States

www.statoil.com

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Thank you

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Maddy Morris
Sent: Wed 6/7/2017 4:00:27 PM

Ryan!

Sorry to miss your call! I got the call from Charles-- thank you so much! I am so excited for this opportunity and can't wait to join the team.

I have turned in my paper work to Charles and told Koch of the tentative last day as June 16 (depending on background check). But happy to come over prior and meet the current scheduler. If you just want to connect the two of us, so we can find some times that work-- that would be great!

Sorry for not calling back. I figured with you traveling with the Administrator an email will be easier for you.

If you need anything else, please don't hesitate to ask!

Thanks again!
Maddy

To: Jackson, Ryan[jackson.ryan@epa.gov]
From: Randall Gerard
Sent: Fri 6/9/2017 1:23:30 AM
Subject: SolarReserve CEO Meeting Request
[SolarReserve Company Overview 24April2017.pdf](#)

Hey Ryan,

How are you? I hope well.

I was hoping you could find some time to chat with SolarReserve CEO Kevin Smith on June 27th to discuss a massive solar project on BLM land in Nevada. This is finally the kind of solar project you would appreciate. Its a great story, private capital, market competition, US leadership, etc..

SolarReserve has brought its ingenuity to energy and produced a global leader in solar energy generation. This American leadership has facilitated manufacturing jobs, energy exports, and global leadership. Mr. Smith would like to deliver a briefing on the company's newest undertaking, the Sandstone project as well as provide some global perspective on energy export market opportunities. SolarReserve's Sandstone project represents a \$5 billion investment that will provide 2,000 MW of power to approximately 2.6 million homes in the state of Nevada and surrounding western states. The project will provide for 20,000 megawatt-hours of energy storage, create 3,000 construction jobs and 40,000 direct, indirect and induced jobs. The materials and suppliers will come from across the country. Attached are briefing documents about the company and the Sandstone project.

We already have a sister project up and running in NV with Crescent Dunes and a 25 year local power contract.

At this juncture, it appears the only question remarks on the Sandstone project will be getting BLM land approval. I know BLM is not your turf but I think you like the company and the story. All positive.

Please let me know if you could meet on June 27th.

Thanks in advance for the consideration.

Sincerely,

Randall Gerard

SolarReserve

SolarReserve, a private renewable energy company, a leader in solar thermal technology with integrated energy storage. In just seven years, SolarReserve has become one of the world's largest builders of solar power projects, with over 6 gigawatts of awarded projects and \$1.8 billion in worldwide operations. The company was awarded the Platts Global Energy *Rising Star Company Award* for industry leadership in advancing breakthrough energy storage technology, a reference to its innovative use of molten salt thermal stores to maximize solar power.

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About SolarReserve

SolarReserve is U.S.-based global developer of utility-scale solar power projects and advanced concentrating solar power (CSP) technologies. The company has successfully financed and constructed almost \$2.0 billion of large scale solar infrastructure projects worldwide, and is successfully developing projects in the U.S., Australia, South Africa, Chile, Morocco, and China. SolarReserve's key technology advancement is the commercialization of an innovative energy storage solution for generating reliable and cost-effective solar electricity, day and night. Its power delivery capabilities to meet peak demand requirements are nearly identical to natural gas-fired power stations—generating when energy is most valuable, reducing cost and risk to electricity rate payers. The technology has helped the U.S. become a leader in solar with energy storage, allowing it to be exported worldwide, creating thousands of American jobs and enhancing national security through energy independence.

Since its formation in early 2008, SolarReserve has developed an extensive global pipeline of projects totaling 13 gigawatts across the world's most attractive, high-growth renewable energy markets. The company is headquartered in Santa Monica, California and maintains a global presence with seven international offices that support its project development activities in more than 20 countries.

SolarReserve in the U.S.

SolarReserve's flagship facility, the Crescent Dunes Solar Energy Project in Nevada, was the world's first and currently the world's largest utility-scale CSP solar tower with fully integrated thermal energy storage. It reliably and costeffectively delivers both 110 megawatts of power plus a massive 1,100 megawatt-hours of energy storage, under a 25-year power purchase agreement with NV Energy, Nevada's largest utility. (For perspective, when it came on line in 2015, the 1,100 megawatt hours of storage was greater than all the world's utility scale batteries combined, at a fraction of the cost.) Now, the proven technology at Crescent Dunes is a blueprint for SolarReserve's projects under development in the U.S. and abroad.

SolarReserve's Crescent Dunes project is an example of how the company's CSP projects uniquely help bring back American jobs to the manufacturing sector, as well as provide an enormous opportunity for U.S. content—as opposed to importing solarphotovoltaic (PV) panels from Asia. For the Crescent Dunes project, equipment and services were purchased across 26 states. All 1.2 million square meters of glass required for the 10,347 heliostats (tracking mirrors) was U.S. sourced, with assembly of the heliostat assemblies completed in an on-site manufacturing facility that employed local workers. Virtually all the 90,000 cubic meters of concrete needed for the project was provided from a local supplier. All 2,000 tons of structural steel was U.S. sourced as was most of the piping, cabling and valves. The project created more than 1,000 construction jobs and 4,000 direct, indirect, and induced jobs across America.

SolarReserve is a recognized partner of the U.S. government. SolarReserve received the prestigious CSP APOLLO award from the U.S. Department of Energy's SunShot Initiative to further develop advanced concentrating solar power technology. This award supports SolarReserve in advancing U.S. leadership in the technology and furthering CSP's ability to replace traditional forms of electric power generation in terms of performance, energy storage and lower costs. SolarReserve has also

been supported by the Commerce Department's international trade advocacy efforts in China, Spain, Chile, Australia, Peru, South Africa, and Ghana. In July 2015, SolarReserve participated in the DOE-DOC Joint Trade Mission to China to create export opportunities.

In October 2016, SolarReserve revealed plans to build the Sandstone project, a solar complex with up to ten advanced solar thermal towers. The facility will deliver 2,000 megawatts of firm capacity, 20,000 megawatt-hours of energy storage capability, and 7,000,000 megawatt-hours of annual output. It would be built in Nevada near the Crescent Dunes plant, and connected to California's and Nevada's transmission systems. Such an immense infrastructure project would be a boon to the U.S. economy, attracting over \$5 billion of project investment, creating more than 3,000 construction jobs, 350 high-paying permanent power plant jobs, and 40,000 direct, indirect, and induced jobs across the country. The project is estimated to generate more than \$600 million tax revenues over the first 20 years and expend more than \$100 million in salaries and operating costs each year.

SolarReserve Globally & Benefits to the U.S.

The global renewable energy market objectively represents one of the most significant business opportunities for the United States in decades. Bloomberg New Energy Finance estimates that more than \$7.7 trillion will be invested in power generation worldwide from 2013 to 2026. Two thirds – over \$5 trillion – of the funds will flow to renewables, which represents more than \$350 billion annually.

With a worldwide portfolio of over 13 gigawatts, SolarReserve has been active in the global renewables market since 2008, and sees worldwide deployment of its U.S. technology as a key component of its business expansion strategy, which will create billions of dollars of U.S. exports and thousands of U.S. jobs. Some selected company accomplishments globally include:

- An agreement with Shenhua Group, the world's largest coal producer, to build 1,000 megawatts of solar thermal projects in China. The deal represents a total project capital expenditure between \$5B and \$6B and will generate nearly \$1B in US exports, helping to counter the trend of importing Chinese renewable technology into the U.S. by exporting more innovative, proven U.S.-developed renewable energy technology and expertise to China. In addition to the Shenhua agreement, SolarReserve has 2,200 megawatts of agreements in China which are not yet publicly disclosed.
- A strong commercial relationship with the South Africa Department of Energy, which selected SolarReserve's Redstone solar thermal project in its latest round of bidding. The 100 megawatt project, with 12 hours of full-load energy storage, will have a 20-year power sales contract with Eskom. The \$850M project is scheduled to achieve financial close this year, with OPIC providing \$400M in debt financing.
- Approval from the Chilean government to develop two of the world's largest solar projects utilizing SolarReserve's proprietary technology. The 260 megawatt Copiapó Solar Project and the 450 megawatt Tamarugal projects will deliver baseload power 24-hours-a-day and will operate at a capacity factor and availability equal to a coal fired power plant.

To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Brown, Byron[brown.byron@epa.gov]; Dickerson, Aaron[dickerson.aaron@epa.gov]; Melodie DeMulling[demulling@eli.org]; Willis, Sharnett[Willis.Sharnett@epa.gov]; Hupp, Sydney[hupp.sydney@epa.gov]
From: Scott Fulton
Sent: Thur 6/8/2017 5:58:44 PM
Subject: Invitation to Participate in ELI Leadership Council Events

Hi Ryan – I hope this finds you well. When we met, I mentioned our interest in having Administration officials join some of our Leadership Council events. As you will recall, ELI's Leadership Council is composed of leading lawyers and environmental professionals who are the primary source of strategic advice and support for ELI. They are predominantly from the private sector. I mentioned in particular the idea of Administrator Pruitt's joining us for our national Leadership Council symposium in September. This would be a closed door session with 40-60 top thinkers in the environmental law community from across the country. It would I think be a great chance for the Administrator to talk about his priorities with an informed and influential audience; I am certain that the Council would greatly value his taking time to do this. **We have a week in view at this point: the week of September 11th. We think would need about an hour of the Administrator's time, as part of what will be a half-day program over all. Is there a time that would work well for him that week? We can build the rest of the program around his availability.**

Also, I wanted to see if you would yourself be willing to join us for one of our regular engagements with our DC Leadership Council members. We hold quarterly luncheons with them where distinguished government officials talk to them in an informal, off-the-record fashion. The experience, including lunch, lasts no more than 90 minutes. Ron Tenpas has spoken to the group in the recent past, as have other senior leaders from EPA, State, DOI and NOAA. Usually around 25-30 members attend (with a few folks on the phone). Our guest usually gives an informal 20 minute talk, and that's followed by about 15-20 minutes of Q&A/discussion. We follow Chatham House rules to allow for a candid exchange. **The next meeting would be in July. Possible dates are Tuesday, July 11, Wednesday, July 12, Tuesday, July 25 or Wednesday, July 26 depending on what works for your scheduling.** I could promise to get you out of the door by no later than 1:30 p.m. Would you be interested and available?

Please let me know your thoughts on both of these questions as soon as you are able. I have taken the liberty of copying some of the folks at the Agency who may be able to help sort out the scheduling questions. Btw, had a good chat with Susan Bodine the other day. She'll be a great help to you when you get her on board. Soon, I hope!

Best regards,

Scott

Scott Fulton

President

Environmental Law Institute

(202) 939-3855

To: Jackson, Ryan[jackson.ryan@epa.gov]
Cc: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]; Catanzaro, Michael J.
EOP/WHO[Ex. 6 - Personal Privacy]; Schwab, Justin[schwab.justin@epa.gov]; Hupp,
Sydney[hupp.sydney@epa.gov]
Bcc: curt.morgan@vistraenergy.com[curt.morgan@vistraenergy.com]; Hall, Martin
L[mihall@firstenergycorp.com]; Shea, Quin[QShea@eei.org];
NWBLACK@southernco.com[NWBLACK@southernco.com]; john@lppc.org[john@lppc.org]; Cassady,
John M.[John.Cassady@nreca.coop]; jcmaierhofer@tva.gov[jcmaierhofer@tva.gov];
DWaterhouse@publicpower.org[DWaterhouse@publicpower.org];
CToth@publicpower.org[CToth@publicpower.org]; Steckelberg, Kathy[KSteckelberg@eei.org];
gdbaker@wms-jen.com[gdbaker@wms-jen.com]
From: Jackson, Ryan
Sent: Sun 6/4/2017 6:19:44 PM
Subject: Roundtable June 19

All --

Thank you for your interest, participation, and your help in coordinating your trade association members' participation in the round table with US EPA Administrator Scott Pruitt to discuss a regulatory path forward for the utility sector. Having an open and robust dialogue with the regulated community is a foundational component of setting meaningful and balanced environmental standards. We look forward to learning more about your perspective as the utility sector not only powers our economic growth, but is also at the forefront of developing a more efficient and cleaner energy future.

The roundtable will start at 1 pm on June 19 at the US EPA headquarters in the Green Room in the Administrator's Suite. We will follow up with an official agenda in the coming days. We have received a number of RSVP's and appreciate that. Please confirm your attendance or the attendance of your trade association members by June 12. Should you have any questions, please email or call at [Ex. 6 - Personal Privacy]

Sincerely,

Ryan

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy

To: Jeffrey Long **Ex. 6 - Personal Privacy**
From: Jackson, Ryan
Sent: Sun 6/4/2017 5:35:29 PM
Subject: RE: Quick Note

Thanks. I trust your enjoying the Hill. I spent many years there.

From: Jeffrey Long [mailto:**Ex. 6 - Personal Privacy**]
Sent: Friday, June 2, 2017 8:46 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Re: Quick Note

Ryan,

Please forgive the intrusion on a Friday night, but I'm doing my best to avoid cluttering your inbox during the work week - especially this week.

Just wanted to drop a line and offer my congratulations for the work your team did this week. Flawlessly handled, typical media noise and expected talking-head hysteria notwithstanding. Director Pruitt handed the Administration its best few days yet.

All the best, and hope all's well,

Jeff

On Wed, May 3, 2017 at 6:04 AM Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Not a problem at all. I appreciate the interest and you will really enjoy working on Capitol Hill and for Senator Hatch. I worked on Capitol Hill for 15 years. It was a great experience.

Ryan Jackson
Chief of Staff

U.S. EPA

Ex. 6 - Personal Privacy

- > On May 3, 2017, at 12:40 AM, Jeffrey Long <Ex. 6 - Personal Privacy> wrote:
- >
- > Ryan,
- >
- > Hope this note finds you well. This is Jeff Long; my apologies that after days of tag we weren't able to catch one another by phone.
- >
- > Just wanted to drop a note to thank you <Ex. 6 - Personal Privacy>

Ex. 6 - Personal Privacy

- >
- > Hope to stay in touch, and if I could ever prove helpful, please don't hesitate to let me know.
- >
- > All the best,
- >
- > Jeff Long

To: Black, Noel W.[NWBLACK@southernco.com]
Cc: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]; Horton, Melissa H.[MHIGGINS@southernco.com]
From: Jackson, Ryan
Sent: Sat 6/3/2017 12:02:22 AM
Subject: Re: Cell

Much appreciated.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

> On Jun 1, 2017, at 11:13 AM, Black, Noel W. <NWBLACK@southernco.com> wrote:
>
> Mandy,
>
> Running down the 19th. Fanning is not available but our COO Kim Greene is available...She has been very involved in the Kemper County Lignite Facility. Do you have a time and place?
>
> Also when you have a moment give me a call...a couple of other questions.
>
> Thanks, Noel Black
> Vice President
> Federal Regulatory Affairs
> Southern Company
> 202.261.5024 office
> Ex. 6 - Personal Privacy mobile
>
>
> -----Original Message-----
> From: Gunasekara, Mandy [mailto:Gunasekara.Mandy@epa.gov]
> Sent: Wednesday, May 31, 2017 10:37 AM
> To: Jackson, Ryan; Black, Noel W.
> Subject: RE: Cell
>
> Hey Noel, Following up from our phone call below is the list of confirmed and tentative/invited attendees. I'll update as appropriate. Let me know if you have any follow-up questions.
>
> Confirmed:
> Nick Akins, AEP
> Gerry Anderson, DTE
> Warner Baxter, Ameren
> Pat Vincent-Collawn, PNM
> Chris Crane, Exelon
> Leo Denault, Entergy
> Tom Farrell, Dominion
> Ben Fowke, Xcel
> Lynn Good, Duke
> Sean Trauschke, OGE
>
>
> Invited:
> Southern Co.

> NRECA (top 3 to 5)
> Basin
> TRI-State
> APPA (top 3 to 5 from Cory)
> TVA
> LGE-KU
> LPPC
> Luminant

>

>

> -----Original Message-----

> From: Jackson, Ryan

> Sent: Wednesday, May 31, 2017 6:33 AM

> To: Black, Noel W. <NWBLACK@southernco.com>

> Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>

> Subject: Re: Cell

>

> Noel, we wanted to see if your CEO or appropriate representative could join a round table with the Administrator on June 19 at 1pm in EPA for a couple hour stakeholder meeting with the Administrator on next steps after the CPP.

>

> We are happy to talk further on this. Much appreciated.

>

> Ryan.

>

>

> Ryan Jackson

> Chief of Staff

> U.S. EPA

> Ex. 6 - Personal Privacy

>

>> On May 30, 2017, at 10:21 PM, Black, Noel W. <NWBLACK@southernco.com> wrote:

>>

>> Mandy,

>>

>> Just seeing this my apologies.

>>

>> My cell is Ex. 6 - Personal Privacy

>>

>> I'll give you a call in the morning.

>>

>> Looking forward to talking.

>>

>> Thanks, Noel

>> Southern Company

>> Ex. 6 - Personal Privacy

>>

>> Please excuse any typos...this is coming from my iPhone.

>>

>> On May 30, 2017, at 8:09 PM, Gunasekara, Mandy

>> <Gunasekara.Mandy@epa.gov<mailto:Gunasekara.Mandy@epa.gov>> wrote:

>>

>> Hey Noel,

>>

>> I hope you are well. What's the best number to reach you? We are setting up the CEO utility round table with the Administrator for June 19th at EPA and we'd love Mr. Fanning to attend.

>>

>> Give me a call when you have a sec. Ex. 6 - Personal Privacy

>>

>> Best,

>> Mandy

>>

>> Sent from my iPhone

To: Wehrum, William L.[wwehrum@hunton.com]
From: Jackson, Ryan
Sent: Fri 6/2/2017 11:39:33 PM
Subject: RE: Checking In

Great news and big thanks. Looking forward to it. I think Pruitt would appreciate another sit down in the near future on next steps like you did before. Thanks.

From: Wehrum, William L. [<mailto:wwehrum@hunton.com>]
Sent: Friday, June 2, 2017 6:28 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Checking In

Ryan – Wanted to let you know that I completed and submitted the last of my forms this afternoon. OPP should have everything they need to move this along.

HUNTON & WILLIAMS Bill Wehrum

Partner

wwehrum@hunton.com
p 202.955.1637

[bio](#) | [vCard](#) | [blog](#) | [LinkedIn](#)

Hunton & Williams LLP
2200 Pennsylvania Avenue, NW
Washington, DC 20037

hunton.com

To: J. Steven Hart[jshart@wms-jen.com]
From: Jackson, Ryan
Sent: Thur 6/1/2017 4:31:47 PM
Subject: RE: How Bannon and Pruitt boxed in Trump on climate pact - POLITICO

I think you may know when we do.

From: J. Steven Hart [mailto:jshart@wms-jen.com]
Sent: Thursday, June 1, 2017 12:19 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: FW: How Bannon and Pruitt boxed in Trump on climate pact - POLITICO

Good read

When you have something official on Paris, please include me on your early distribution list

Subject: How Bannon and Pruitt boxed in Trump on climate pact - POLITICO

<http://www.politico.com/story/2017/05/31/trump-paris-climate-agreement-239008>

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To: Ado Machida[ado.machida@navigatorsglobal.com]
From: Jackson, Ryan
Sent: Thur 6/1/2017 2:30:47 PM
Subject: Re:

He's in a similar spot as other contractors, this will take some time and EPA has already taken a legal position which DOJ has defended so although we need to provide SRF funds they attorney in this case is in a tough spot and will need to provide us more time.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 1, 2017, at 9:53 AM, Ado Machida <ado.machida@navigatorsglobal.com> wrote:

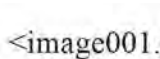
Ryan,
Just checking back - the lawyer says that he has to file another motion for a stay, and he just wanted to know if there might be any movement on this.

I know it's only been a couple of days.

Thanks!

Ado

Ado Machida | Navigators Global LLC

 901 7th Street N.W., Suite 200, Washington, DC 20001

P 202.315.5100 | F 202.315.5010

ado.machida@navigatorsglobal.com

On May 29, 2017, at 10:17, Ado Machida <ado.machida@navigatorsglobal.com> wrote:

Ryan,

Much thanks!

Ado

Ado Machida | Navigators Global LLC

901 7th Street N.W., Suite 200, Washington, DC 20001

<image001.png>

P 202.315.5100 | F 202.315.5010

ado.machida@navigatorsglobal.com

From: "Jackson, Ryan" <jackson.ryan@epa.gov>

Date: Sunday, May 28, 2017 at 2:51 PM

To: Ado Machida <ado.machida@navigatorsglobal.com>

Subject: <no subject>

Thanks again for the time last week. I'm checking on the PR SRF situation. You are correct, that was a ridiculously written memo. I'll get back with you soon.

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy

<image001.png>



To: chris hladick[Ex. 6 - Personal Privacy]
From: Jackson, Ryan
Sent: Thur 6/1/2017 10:02:45 AM
Subject: Re: Region X

No, but presidential personnel is simply very very slow with positions outside of D.C. I'll keep pinging them on it.

Ryan Jackson
Chief of Staff
U.S. EPA

[Ex. 6 - Personal Privacy]

> On May 31, 2017, at 2:57 PM, chris hladick [Ex. 6 - Personal Privacy] wrote:

>

> Any update? I have had a conversation with my Gov. and let him know my name is in the hat. Is there some kind of log jam at the White House?

>

> Chris

>

> Sent from my iPhone

To: Jim Massie[jmassie@massiepartners.com]
From: Jackson, Ryan
Sent: Wed 6/14/2017 5:27:56 PM
Subject: RE: good morning

Let me check on this.

From: Jim Massie [mailto:jmassie@massiepartners.com]
Sent: Wednesday, June 14, 2017 11:24 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: good morning

Ryan,

Hope all is good. I would like a little advice. Siemen's executive management team is in DC the afternoon of June 27. I believe that Administrator Pruitt has a meeting request for this group. Can you advise me if you need anything from us? And who we should be in contact with to track the potential of a meeting. Thanks. Sorry to be a pest!

Jim



Jim Massie
(202) 841-8037
jmassie@massiepartners.com

To: Hocking, Jillian[Jillian.Hocking@environment.gov.au]
Cc: Thawley, Cosimo[Cosimo.Thawley@environment.gov.au]
From: Jackson, Ryan
Sent: Tue 6/13/2017 10:44:31 PM
Subject: Re: thank you for your time

Thank you.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 13, 2017, at 6:42 PM, Hocking, Jillian <Jillian.Hocking@environment.gov.au> wrote:

Hi Ryan

We are ready for your call to the Canberra office (currently 8:40am Aus time).

Thanks

Jillian

Sent from my iPhone

On 13 Jun 2017, at 7:48 am, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Jillian, it was a pleasure to speak with you and thank you for your help. I wanted to see if we could set up a time for a call between Cosimo and I possibly for tomorrow morning around 8:30am Australia time which would be about 7:30pm U.S. eastern time.

I'm happy to call at the Canberra office phone number.

Much appreciated.

Ryan.

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy

To: Henry Darwin **Ex. 6 - Personal Privacy**
From: Jackson, Ryan
Sent: Tue 6/13/2017 4:13:04 PM
Subject: Re: Giving Notice

Not at all. We got off schedule this morning. We'll give you a shout today.

Ryan Jackson
Chief of Staff
U.S. EPA
Ex. 6 - Personal Privacy

On Jun 13, 2017, at 12:09 PM, Henry Darwin <**Ex. 6 - Personal Privacy**> wrote:

Ryan:
Liz missed our call this morning and I haven't been able to get in touch with her. Is there something I should be aware of?

Thanks

Henry

----- Forwarded message -----

From: Henry Darwin **Ex. 6 - Personal Privacy**
Date: Tue, Jun 13, 2017 at 7:31 AM
Subject: Re: Giving Notice
To: "Bowman, Liz" <Bowman.Liz@epa.gov>

I tried calling. You can call me at **Ex. 6 - Personal Privacy**
Thanks

Henry

On Jun 12, 2017 3:54 PM, "Henry Darwin" <**Ex. 6 - Personal Privacy**> wrote:

Thanks Liz. I will call you in the morning.
Henry

On Mon, Jun 12, 2017 at 2:56 PM, Bowman, Liz <Bowman.Liz@epa.gov> wrote:

Ex. 6 - Personal Privacy

From: Henry Darwin [mailto:**Ex. 6 - Personal Privacy**]

Sent: Monday, June 12, 2017 5:51 PM
To: Bowman, Liz <[Bowman.Liz@epa.gov](mailto: Bowman.Liz@epa.gov)>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Re: Giving Notice

Liz:

That would be great. What number should I call?

Henry

On Mon, Jun 12, 2017 at 2:40 PM, Bowman, Liz <[Bowman.Liz@epa.gov](mailto: Bowman.Liz@epa.gov)> wrote:

Henry, would be happy to help. I think the "no comment" doesn't do you justice, and would love to get a good, strong quote in the que. Do you have time to talk tomorrow morning, like 10:30 a.m. Eastern?

From: Jackson, Ryan
Sent: Monday, June 12, 2017 5:17 PM
To: Henry Darwin <Ex. 6 - Personal Privacy>; Bowman, Liz <[Bowman.Liz@epa.gov](mailto: Bowman.Liz@epa.gov)>
Subject: RE: Giving Notice

Without question we need to coordinate. I'm unsure how this word gets out because we literally have told no one.

However, Liz, we need to coordinate on this.

Without question there's a great message here, and we are eager to take advantage of it.

From: Henry Darwin [mailto:[Ex. 6 - Personal Privacy](#)]
Sent: Monday, June 12, 2017 4:38 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Re: Giving Notice

Ryan:

The press in Arizona is asking the Governor's communications director for confirmation of my leaving Arizona to join EPA. I am unaware of their source, but I have been getting congratulatory e-mails from former EPA officials the last couple of weeks. I am not sure what your communication plans are, but I could have our press folks talk with yours to develop coordinated press releases if you'd like. I believe there's a great opportunity to message a positive direction for EPA.

My meeting with the Governor is scheduled for this afternoon. So, no plans to respond to Arizona press until tomorrow. The communication may be "no comment" depending on your plans.

Thanks

Henry

On Mon, Jun 12, 2017 at 7:18 AM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Not at all. Welcome aboard.

From: Henry Darwin [mailto:Ex. 6 - Personal Privacy]
Sent: Monday, June 12, 2017 10:14 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Munoz, Charles
<munoz.charles@epa.gov>
Subject: Giving Notice

Veronica and I plan to give notice today. Any concerns?

Thanks

Henry

To: Henry Darwin [Ex. 6 - Personal Privacy] Bowman, Liz[Bowman.Liz@epa.gov]
From: Jackson, Ryan
Sent: Mon 6/12/2017 9:54:25 PM
Subject: RE: Giving Notice

Liz, with Henry we are getting a two-fer.

Not only will he be the Assistant Deputy Administration and Chief of Operations but his wife Veronica will be an Advisor to the Administrator for the Office of Land and Emergency Response.

I'll circle back with you on all this in the morning. Jet lag.

From: Henry Darwin [mailto:Ex. 6 - Personal Privacy]
Sent: Monday, June 12, 2017 5:51 PM
To: Bowman, Liz <Bowman.Liz@epa.gov>
Cc: Jackson, Ryan <jackson.ryan@epa.gov>
Subject: Re: Giving Notice

Liz:

That would be great. What number should I call?

Henry

On Mon, Jun 12, 2017 at 2:40 PM, Bowman, Liz <Bowman.Liz@epa.gov> wrote:

Henry, would be happy to help. I think the "no comment" doesn't do you justice, and would love to get a good, strong quote in the que. Do you have time to talk tomorrow morning, like 10:30 a.m. Eastern?

From: Jackson, Ryan
Sent: Monday, June 12, 2017 5:17 PM
To: Henry Darwin <Ex. 6 - Personal Privacy>; Bowman, Liz <Bowman.Liz@epa.gov>
Subject: RE: Giving Notice

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Sent: Monday, June 12, 2017 10:14 AM
To: Jackson, Ryan <jackson.ryan@epa.gov>; Munoz, Charles <munoz.charles@epa.gov>
Subject: Giving Notice

Veronica and I plan to give notice today. Any concerns?

Thanks

Henry

To: Steven Koonin Ex. 6 - Personal Privacy
From: Jackson, Ryan
Sent: Mon 6/12/2017 2:13:05 PM
Subject: Re: [SPAM] Keeping you in the loop

Yes. Richard starts today. He will be read into this shortly.

Ryan Jackson
Chief of Staff
U.S. EPA
Ex. 6 - Personal Privacy

> On Jun 12, 2017, at 9:52 AM, Steven Koonin Ex. 6 - Personal Privacy wrote:
>
> Ryan
>
> Just to keep you up to date. Last Friday, I, together with Will Happer (Princeton Professor Emeritus, likely Red Team member) and Kathleen Hartnett White (slated to be next CEQ Chair) had a brief meeting Lamar Smith and his staff re the Red/Blue Exercise. Chairman Smith was very supportive and, in a longer meeting with just the staff, they volunteered to organize a letter from multiple Members to the White House urging such an exercise be conducted. Since that latter will involve a broader circulation of a draft prospectus, I will modify the latter just slightly.
>
> Steve
>
> PS Saw Richard Yamada briefly on that visit as well, although he didn't sit in on any of the meetings and he didn't mention (perhaps unaware) his pending involvement in this business.
>
> Sent from my iPad

To: Desmarie Waterhouse[dwaterhouse@publicpower.org]
Cc: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
From: Jackson, Ryan
Sent: Fri 6/9/2017 10:31:01 PM
Subject: Re: List of public power CEOs from APPA

Wow well thank you. We'll get back with you on a firm agenda early next week.

Ryan Jackson
Chief of Staff
U.S. EPA
Ex. 6 - Personal Privacy

On Jun 9, 2017, at 4:21 PM, Desmarie Waterhouse <dwaterhouse@publicpower.org> wrote:

Mandy and Ryan:

Below are three CEOs that will attend the CEO roundtable on June 19. Again, thank you so much for the invitation to participate. I wish Sue Kelly could participate as well, but given the conference, there is no way for her to do so.

All three CEOs have coal-fired generation that would have been impacted by the rule (they also have natural gas-fired generation). Tom, Raj, and Terry sit on APPA's CEO Climate Change and Generation Policy Task Force. Please note Raj and Terry are flying up for the meeting from Orlando and then returning to Orlando afterwards. Tom cancelled going to the conference so he could come to this meeting.

- [REDACTED] Tom Heller – President & CEO, Missouri River Energy Services – tom.heller@mrenergy.com (joint action agency that supplies power to public power utilities in ND, SD, IA, and MN).
- [REDACTED] Raj (Rajeshwar is full first name) Rao – President & CEO, Indiana Municipal Power Agency (joint action agency that supplies power to 60 public power utilities in IN and one in OH) – rajr@impa.com
- [REDACTED] Terry Huval – Director (this is CEO position), Lafayette Utilities System – public power utility located in Lafayette, LA (serves more than 65,000 retail customers – thuval@les.org)

We also extended invitation to Dan Sullivan, the CEO of Grand River Dam Authority in Vinita, OK. Dan knows Administrator Pruitt. He also sits on APPA's board of directors. He is unsure whether he can go yet given he is Ex. 6 - Personal Privacy for our meeting. If he tells me he can go, I will let you know.

I understand some public power CEOs are attending on behalf of the Large Public Power Council (LPPC), a group of our largest 26 members. Dan Sullivan is also a member of LPPC.

If you need anything else from me, please let me know.

Des

Desmarie M. Waterhouse

Vice President of Government Relations & Counsel

American Public Power Association

2451 Crystal Dr., Ste. 1000

Arlington, VA 22202

202-467-2930 (w)

Ex. 6 - Personal Privacy (c)

To: Walls, Michael[Michael_Walls@americanchemistry.com]
From: Jackson, Ryan
Sent: Fri 6/9/2017 2:58:59 PM
Subject: Re: Invitation to speak to ACC Health, Products and Science Policy Committee June 27

Yes

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 9, 2017, at 9:22 AM, Walls, Michael <Michael_Walls@americanchemistry.com> wrote:

Great! Thanks Ryan. Let me know if you'd like more information.

Art & Soul is located at 415 New Jersey Ave NW, Washington, DC 20001; phone (202) 393-7777. I can be reached by email or cell that evening

Ex. 6 - Personal Privacy

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Friday, June 9, 2017 8:34 AM
To: Walls, Michael
Cc: Hupp, Sydney
Subject: Re: Invitation to speak to ACC Health, Products and Science Policy Committee June 27

Awesome

Ryan Jackson

Chief of Staff

U.S. EPA

Ex. 6 - Personal Privacy

On Jun 9, 2017, at 8:24 AM, Walls, Michael <Michael_Walls@americanchemistry.com> wrote:

Ryan, the members of ACC's Health, Products and Science Policy Committee (our industry's TSCA experts) will be in town on June 27 for their annual planning meeting. The group will be meeting for drinks and dinner on June 27, 2017, starting at 6 p.m.. We would like to invite you to address the group with remarks beginning at 6:30 or so. I hope you will be able to join us – I know the member companies would value having the benefit of your perspective. I expect about 30 member company representatives to attend. If you can join us, please let me know. Thanks very much and have a good weekend. Mike

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To: Desmarie Waterhouse[dwaterhouse@publicpower.org]
Cc: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
From: Jackson, Ryan
Sent: Thur 6/8/2017 4:37:12 PM
Subject: Re: Public power CEO

The meeting is at 1pm in the green room in the Administrator's suite. They should plan to be there by 12:45 to get through security. It's a straight shot. We'll have people in the lobby helping usher people up. We are not announcing to the press. It's a closed stakeholder meeting to get honest input. What should be next on 111 if anything and are there other opportunities to get regulatory certainty.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 8, 2017, at 8:30 AM, Desmarie Waterhouse <dwaterhouse@publicpower.org> wrote:

Some are just logistical:

Where will the meeting be? By what time do you want CEOs there to get through security?

Will the meeting be announced to the press?

I have three CEOs confirmed that they can go. We have one more we are waiting to hear back from. Is giving you their names, titles, and organizations enough or do you need their contact info?

Is there anything you need from us? Almost all of the staff will be in Orlando for our National Conference. I leave for that next Friday.

We really appreciate the outreach and want to thank you again for the invitation to participate.

Sent from my Verizon, Samsung Galaxy smartphone

----- Original message -----

From: "Gunasekara, Mandy" <Gunasekara.Mandy@epa.gov>
Date: 6/8/17 12:49 AM (GMT-05:00)
To: Desmarie Waterhouse <dwaterhouse@publicpower.org>
Cc: "Jackson, Ryan" <jackson.ryan@epa.gov>

Subject: Re: Public power CEO

Hi Desmarie,

I'm out of the country until Tuesday and Ryan is en route this morning. We are working out the final agenda for the 19th starting at 1 pm.

Can you email your specific questions for now?

Best,

Mandy

Sent from my iPhone

On Jun 7, 2017, at 5:06 PM, Desmarie Waterhouse <dwaterhouse@publicpower.org> wrote:

Ryan and Mandy:

Do either of you have time to talk today about the roundtable? I have a couple of questions on logistics, etc. Shouldn't take more than five to ten minutes.

Thanks.

Des

From: Jackson, Ryan [<mailto:jackson.ryan@epa.gov>]

Sent: Tuesday, June 6, 2017 6:04 PM

To: Desmarie Waterhouse <dwaterhouse@publicpower.org>

Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>;

Ex. 6 - M. Catanzaro, EOP Schwab, Justin <schwab.justin@epa.gov>; Hupp, Sydney <hupp.sydney@epa.gov>; Dominguez, Alexander <dominguez.alexander@epa.gov>

Subject: Re: Public power CEO

Thank you.

Ryan Jackson

Chief of Staff

U.S. EPA

Ex. 6 - Personal Privacy

On Jun 6, 2017, at 5:21 PM, Desmarie Waterhouse <dwaterhouse@publicpower.org> wrote:

Ryan:

I just heard back from one of our CEOs that can attend. Tom Heller, the President and CEO of Missouri River Energy Services (MRES), a joint action agency that serves 60 public power utilities in four states (ND, SD, MN, and IA) is available to attend the meeting. He will come to D.C. and miss our National Conference to be at the roundtable.

Please let me know what the next steps are – should I send you his contact info or is there info I should relay to him about the meeting?

Thanks so much.

Des

Desmarie M. Waterhouse

Vice President of Government Relations & Counsel

American Public Power Association

2451 Crystal Dr., Ste. 1000

Arlington, VA 22202

202-467-2930 (w)

Ex. 6 - Personal Privacy (c)

To: Hale, Michelle[hale.michelle@epa.gov]
Cc: mjunk@cityoftulsa.org[mjunk@cityoftulsa.org]
From: Jackson, Ryan
Sent: Thur 6/8/2017 8:46:47 AM
Subject: Re: additional portraits

Great deal. We've landed in Rome.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 7, 2017, at 5:43 PM, Hale, Michelle <hale.michelle@epa.gov> wrote:

Just the Portrait Gallery -- they had the Henry Clay. So, yes, we still are getting the landscapes.

Sent from my iPhone

On Jun 7, 2017, at 4:35 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Damn it.

Junk, can you help us with Gilcrease?

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 7, 2017, at 4:32 PM, Hale, Michelle <hale.michelle@epa.gov> wrote:

From: Isaacson, Beth [mailto:IsaacsonB@si.edu]
Sent: Wednesday, June 7, 2017 4:30 PM
To: Hale, Michelle <hale.michelle@epa.gov>
Cc: Kelly, Claire <KellyC@si.edu>
Subject: RE: additional portraits

Hi Michelle,

What a busy time! Sorry for the delay but the Chief curator was out as I mentioned, and then in a meeting all day Tuesday.

So, the bottom line is this – we have been bombarded with requests from the new administration for portraits and after discussing with the curators have decided to limit the number of objects on loan to any “high-ranking government official” to two. We also need to make sure that we have objects available for our own exhibition needs and a long-term loan of four years can be a constraint.

I hope the Administrator enjoys the portraits he has and I am sorry for the bad news.

Beth

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]
Sent: Monday, June 05, 2017 10:32 AM
To: Isaacson, Beth <IsaacsonB@si.edu>
Subject: RE: additional portraits

Hi, Beth, any word?

From: Isaacson, Beth [<mailto:IsaacsonB@si.edu>]
Sent: Friday, May 26, 2017 3:40 PM
To: Hale, Michelle <hale.michelle@epa.gov>
Cc: Grimsley, Molly <GrimsleyM@si.edu>
Subject: RE: additional portraits

Hi Michelle,

We may have a Henry Clay in storage but I do not know the condition of the painting. The chief curator is out until the first week in June so this will have to wait until she returns.

Have a good holiday weekend,

Beth

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]
Sent: Thursday, May 25, 2017 5:21 PM
To: Isaacson, Beth <IsaacsonB@si.edu>
Cc: Grimsley, Molly <GrimsleyM@si.edu>
Subject: Re: additional portraits

How about Henry Clay?

Sent from my iPhone

On May 25, 2017, at 4:54 PM, Isaacson, Beth <IsaacsonB@si.edu> wrote:

Hi Michelle,

I just heard from our chief curator and she is not willing to lend Sir Winston Churchill right now because she is not sure when we might need him again for our exhibition purposes.

Beth

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]
Sent: Thursday, May 25, 2017 4:06 PM
To: Isaacson, Beth <IsaacsonB@si.edu>
Subject: RE: additional portraits

If we get another one – we will hang it on the wall farthest from the windows
– I remember we can't hang anything over the fireplace due to the lighting.

From: Isaacson, Beth [<mailto:IsaacsonB@si.edu>]
Sent: Thursday, May 25, 2017 4:02 PM
To: Hale, Michelle <hale.michelle@epa.gov>
Cc: Grimsley, Molly <GrimsleyM@si.edu>
Subject: RE: additional portraits

One Daniel Boone in on display here in the gallery and the other is on a long-term loan already.

We only have the one painting of Winston Churchill so I will have to check on that with the curators and historians and let you know.

Where would you put the painting? If I recall correctly we have issues with too much light in the office...

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]
Sent: Thursday, May 25, 2017 3:50 PM
To: Isaacson, Beth <IsaacsonB@si.edu>
Subject: RE: additional portraits

I see that there are several Daniel Boone and Winston Churchill portraits.
Are they available for loan?

From: Isaacson, Beth [<mailto:IsaacsonB@si.edu>]
Sent: Thursday, May 25, 2017 3:47 PM
To: Hale, Michelle <hale.michelle@epa.gov>
Subject: RE: additional portraits

Hi Michelle,

We do not have a limit, per se, but we have had many requests with the change of administration so we are running out of paintings. ☺ That being said, we do not have a selection of portraits in a "lending program" -you would either have to give me names or look up on our website <http://npg.si.edu/portraits> to search for portraits. We do not lend photographs, prints or drawings (actually any work on paper) and we do not lend objects on view here at the gallery.

Let me know what you want to do,

Beth

<image001.png>

Beth Isaacson

Exhibition Assistant

Smithsonian

National Portrait Gallery

isaacsonB@si.edu | 202.633.8282

Mailing Address

MRC 973

PO Box 37012

Washington, DC 20013-7012

Street Address

750 Ninth Street NW, Suite 410

Washington, DC 20001

[<image002.png>](#) [<image003.png>](#) [<image004.png>](#) [<image005.png>](#)

[npg.si.edu](#)

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]

Sent: Thursday, May 25, 2017 3:25 PM

To: Isaacson, Beth <IsaacsonB@si.edu>

Subject: additional portraits

Beth,

Could you let me know what the limit is on portraits that we can obtain from the National Portrait Gallery? We love the Marshall and Monroe and would like to get some more if possible and if available. Do you have a list of the portraits that are available in your lending program?

Michelle Hale

Executive Assistant to the Administrator

Environmental Protection Agency

1200 Pennsylvania Ave., NW,

WJCS, Suite 3000

Washington, D.C. 20460

(202) 564-1430

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To: Hale, Michelle[hale.michelle@epa.gov]
Cc: mjunk@cityoftulsa.org[mjunk@cityoftulsa.org]
From: Jackson, Ryan
Sent: Wed 6/7/2017 10:18:09 PM
Subject: Re: additional portraits

Oh good. I thought we were not getting those. The landscapes will be nice. Sorry, Michael.
False alarm. I thought we were getting nothing else. We are good.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

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Ex. 6 - Personal Privacy

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Cc: Kelly, Claire <KellyC@si.edu>
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Hi Michelle,

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<image001.png>

Beth Isaacson

Exhibition Assistant

Smithsonian

National Portrait Gallery

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750 Ninth Street NW, Suite 410

Washington, DC 20001

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[npg.si.edu](#)

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Environmental Protection Agency

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(202) 564-1430

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From: Jackson, Ryan
Sent: Wed 6/7/2017 9:12:53 PM
Subject: Re: additional portraits

Oh oh wait so we can still get the 3 more?

I misunderstood. I think.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 7, 2017, at 4:41 PM, Hale, Michelle <hale.michelle@epa.gov> wrote:

And remember we have 3 landscapes coming from the other Smithsonian facility.

From: Jackson, Ryan
Sent: Wednesday, June 7, 2017 4:35 PM
To: Hale, Michelle <hale.michelle@epa.gov>; mjunk@cityoftulsa.org
Subject: Re: additional portraits

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Chief of Staff

U.S. EPA

Ex. 6 - Personal Privacy

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What a busy time! Sorry for the delay but the Chief curator was out as I mentioned, and then in a meeting all day Tuesday.

So, the bottom line is this – we have been bombarded with requests from the new administration for portraits and after discussing with the curators have decided to limit the number of objects on loan to any "high-ranking government official" to two. We also need to make sure that we have objects available for our own exhibition needs and a long-term loan of four years can be a constraint.

I hope the Administrator enjoys the portraits he has and I am sorry for the bad news.

Beth

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]
Sent: Monday, June 05, 2017 10:32 AM
To: Isaacson, Beth <IsaacsonB@si.edu>
Subject: RE: additional portraits

Hi, Beth, any word?

From: Isaacson, Beth [<mailto:IsaacsonB@si.edu>]
Sent: Friday, May 26, 2017 3:40 PM

To: Hale, Michelle <hale.michelle@epa.gov>
Cc: Grimsley, Molly <GrimsleyM@si.edu>
Subject: RE: additional portraits

Hi Michelle,

We may have a Henry Clay in storage but I do not know the condition of the painting. The chief curator is out until the first week in June so this will have to wait until she returns.

Have a good holiday weekend,

Beth

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]
Sent: Thursday, May 25, 2017 5:21 PM
To: Isaacson, Beth <IsaacsonB@si.edu>
Cc: Grimsley, Molly <GrimsleyM@si.edu>
Subject: Re: additional portraits

How about Henry Clay?

Sent from my iPhone

On May 25, 2017, at 4:54 PM, Isaacson, Beth <IsaacsonB@si.edu> wrote:

Hi Michelle,

I just heard from our chief curator and she is not willing to lend Sir Winston Churchill right now because she is not sure when we might need him again for our exhibition purposes.

Beth

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]

Sent: Thursday, May 25, 2017 4:06 PM
To: Isaacson, Beth <IsaacsonB@si.edu>
Subject: RE: additional portraits

If we get another one – we will hang it on the wall farthest from the windows – I remember we can't hang anything over the fireplace due to the lighting.

From: Isaacson, Beth [<mailto:IsaacsonB@si.edu>]
Sent: Thursday, May 25, 2017 4:02 PM
To: Hale, Michelle <hale.michelle@epa.gov>
Cc: Grimsley, Molly <GrimsleyM@si.edu>
Subject: RE: additional portraits

One Daniel Boone is on display here in the gallery and the other is on a long-term loan already.

We only have the one painting of Winston Churchill so I will have to check on that with the curators and historians and let you know.

Where would you put the painting? If I recall correctly we have issues with too much light in the office...

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]
Sent: Thursday, May 25, 2017 3:50 PM
To: Isaacson, Beth <IsaacsonB@si.edu>
Subject: RE: additional portraits

I see that there are several Daniel Boone and Winston Churchill portraits. Are they available for loan?

From: Isaacson, Beth [<mailto:IsaacsonB@si.edu>]
Sent: Thursday, May 25, 2017 3:47 PM
To: Hale, Michelle <hale.michelle@epa.gov>
Subject: RE: additional portraits

Hi Michelle,

We do not have a limit, per se, but we have had many requests with the change of administration so we are running out of paintings. ☺ That being said, we do not have a selection of portraits in a "lending program" -you would either have to give me names or look up on our website <http://npg.si.edu/portraits> to search for portraits. We do not lend photographs, prints or drawings (actually any work on paper) and we do not lend objects on view here at the gallery.

Let me know what you want to do,

Beth

<[image001.png](#)>

Beth Isaacson

Exhibition Assistant

Smithsonian

National Portrait Gallery

IsaacsonB@si.edu | 202.633.8282

Mailing Address

MRC 973

PO Box 37012

Washington, DC 20013-7012

Street Address

750 Ninth Street NW, Suite 410

Washington, DC 20001

[<image002.png>](#) [<image003.png>](#) [<image004.png>](#) [<image005.png>](#)

[npg.si.edu](#)

From: Hale, Michelle [<mailto:hale.michelle@epa.gov>]

Sent: Thursday, May 25, 2017 3:25 PM

To: Isaacson, Beth <IsaacsonB@si.edu>

Subject: additional portraits

Beth,

Could you let me know what the limit is on portraits that we can obtain from the National Portrait Gallery? We love the Marshall and Monroe and would like to get some more if possible and if available. Do you have a list of the portraits that are available in your lending program?

Michelle Hale

Executive Assistant to the Administrator

Environmental Protection Agency

1200 Pennsylvania Ave., NW,

WJCS, Suite 3000

Washington, D.C. 20460

(202) 564-1430

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To: Ariel Emanuel[AEmanuel@wmeentertainment.com]
From: Jackson, Ryan
Sent: Wed 6/7/2017 6:07:33 PM
Subject: Re:

I don't know how you get around the ICI conversion. However I'm in Cincinnati presently with the Administrator and will be in Italy at the G7 for the remainder of the week.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 7, 2017, at 12:11 PM, Ariel Emanuel <AEmanuel@wmeentertainment.com> wrote:

Anything going on?

Ariel Emanuel | WME
AEmanuel@wmeentertainment.com

Ex. 6 - Personal Privacy

To: Desmarie Waterhouse[dwaterhouse@publicpower.org]
Cc: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov];
Ex. 6 - Michael Catanzaro, EOP } Schwab,
Justin[schwab.justin@epa.gov]; Hupp, Sydney[hupp.sydney@epa.gov]
From: Jackson, Ryan
Sent: Tue 6/6/2017 9:10:08 PM
Subject: Re: Roundtable June 19

Thanks.

Ryan Jackson
Chief of Staff
U.S. EPA
Ex. 6 - Personal Privacy

On Jun 6, 2017, at 4:53 PM, Desmarie Waterhouse <dwaterhouse@publicpower.org> wrote:

Ryan:

APPA has its National Conference in Orlando on June 19. I have reached out to three CEOs to see if they can come to D.C. for the event. As soon as I confirm they can do it, I will follow back up with you. Sue Kelly, our CEO, will not be available given our event is at the same time.

Thanks for the invite. Will be back in touch soon.

Des

From: Jackson, Ryan [mailto:jackson.ryan@epa.gov]
Sent: Sunday, June 4, 2017 2:20 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; Catanzaro, Michael J. EOP/WHO } Ex. 6 - Michael Catanzaro, EOP }
<schwab.justin@epa.gov>; Hupp, Sydney <hupp.sydney@epa.gov>
Subject: Roundtable June 19

All --

Thank you for your interest, participation, and your help in coordinating your trade association members' participation in the round table with US EPA Administrator Scott Pruitt to discuss a regulatory path forward for the utility sector. Having an open and robust dialogue with the regulated community is a foundational component of setting meaningful and balanced environmental standards. We look forward to learning more about your perspective as the utility sector not only powers our economic growth, but is also at the forefront of developing a more efficient and cleaner energy future.

The roundtable will start at 1 pm on June 19 at the US EPA headquarters in the Green Room in the Administrator's Suite. We will follow up with an official agenda in the coming days. We have received a number of RSVP's and appreciate that. Please confirm your attendance or the attendance of your trade association members by June 12. Should you have any questions, please email or call at Ex. 6 - Personal Privacy

Sincerely,

Ryan

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy

To: George D. Baker[gdbaker@wms-jen.com]
From: Jackson, Ryan
Sent: Tue 6/6/2017 3:21:39 PM
Subject: Re: RE:

We are just looking for an honest conversation.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

On Jun 6, 2017, at 10:47 AM, George D. Baker <gdbaker@wms-jen.com> wrote:

Understood. Sean had hoped to provide you a pre-brief as to where the utility group's recommendations were heading and to make sure the group was addressing the matters the Administrator wanted addressed in the June sit-down. That said, given the press of your schedule Sean will most certainly understand the situation. We will stand prepared to participate on the 19th. Great thanks. Go get 'em!

George Baker

-----Original Message-----

From: Jackson, Ryan [<mailto:jackson.ryan@epa.gov>]
Sent: Tuesday, June 06, 2017 10:01 AM
To: George D. Baker
Subject:

George, I have a ton of things going on with ensuring Pruitt is taken care of and planning for an overseas trip. Why is this call necessary? I appreciate him coming June 19. Let's roll with that.

Ryan Jackson
Chief of Staff
U.S. EPA

Ex. 6 - Personal Privacy

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message and any attachments. Thank you.

To: rjmartin@alphanr.com[rjmartin@alphanr.com]
Cc: Greenwalt, Sarah[greenwalt.sarah@epa.gov]
From: Jackson, Ryan
Sent: Mon 6/5/2017 1:25:47 PM
Subject: CWA permits

Jay, can you send us information on the CWA permits your working with the Agency to get?

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy

To: Hall, Martin L[mlhall@firstenergycorp.com]
Cc: Michael Catanzaro[Ex. 6 - Personal Privacy] Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
From: Jackson, Ryan
Sent: Mon 6/5/2017 1:53:30 AM
Subject: Re: *EXTERNAL* Roundtable June 19

Thx.

Ryan Jackson
Chief of Staff
U.S. EPA
[Ex. 6 - Personal Privacy]

On Jun 4, 2017, at 6:35 PM, Hall, Martin L <mlhall@firstenergycorp.com> wrote:

Ryan,
I confirmed with with Chuck Jones (FE CEO) and he is reworking his schedule so that he can participate.
Thanks,
Marty

On Jun 4, 2017, at 2:19 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

All --

Thank you for your interest, participation, and your help in coordinating your trade association members' participation in the round table with US EPA Administrator Scott Pruitt to discuss a regulatory path forward for the utility sector. Having an open and robust dialogue with the regulated community is a foundational component of setting meaningful and balanced environmental standards. We look forward to learning more about your perspective as the utility sector not only powers our economic growth, but is also at the forefront of developing a more efficient and cleaner energy future.

The roundtable will start at 1 pm on June 19 at the US EPA headquarters in the Green Room in the Administrator's Suite. We will follow up with an official agenda in the coming days. We have received a number of RSVP's and appreciate that. Please confirm your attendance or the attendance of your trade association members by June

12. Should you have any questions, please email or call at Ex. 6 - Personal Privacy

Sincerely,

Ryan

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy

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To: Alexandra Dunn[adunn@ecos.org]
Cc: Gunasekara, Mandy[Gunasekara.Mandy@epa.gov]
From: Jackson, Ryan
Sent: Sun 6/4/2017 8:31:04 PM
Subject: Re: Roundtable June 19

I just wanted to put it initially on your radar so you know and know it's part of a kind of series of meetings. We'll get back in touch with you.

Ryan Jackson
Chief of Staff
U.S. EPA
Ex. 6 - Personal Privacy

On Jun 4, 2017, at 4:24 PM, Alexandra Dapolito Dunn <adunn@ecos.org> wrote:

Sounds great. We have a 3.5 hour meeting at HQ for the ECOS leadership - July 18 - already have the Green Room held and a half hour of the Administrator's time. How long would you want for this conversation? I'm sure we could fit it into this agenda quite well - the agenda is not set yet. Who would you like me to follow up with?

Sent from my iPhone

On Jun 4, 2017, at 2:49 PM, Jackson, Ryan <jackson.ryan@epa.gov> wrote:

Alex, attached is an invite I sent to utilities to invite them to a roundtable to discuss next steps after the CPP. I would like to incorporate something like this into the July ECOS meeting if that makes sense. Let me know when would be convenient to talk about that. We can hold it wherever you're holding the ECOS meeting instead of at the EPA, of course, as well.

From: Jackson, Ryan
Sent: Sunday, June 4, 2017 2:20 PM
To: Jackson, Ryan <jackson.ryan@epa.gov>
Cc: Gunasekara, Mandy <Gunasekara.Mandy@epa.gov>; 'Catanzaro, Michael J. EOP/WHO' <Ex. 6 - Personal Privacy>; Schwab, Justin <schwab.justin@epa.gov>; Hupp, Sydney <hupp.sydney@epa.gov>
Subject: Roundtable June 19

All --

Thank you for your interest, participation, and your help in coordinating your trade association members' participation in the round table with US EPA Administrator Scott Pruitt to discuss a regulatory path forward for the utility sector. Having an open and robust dialogue with the regulated community is a foundational component of setting meaningful and balanced environmental standards. We look forward to learning more about your perspective as the utility sector not only powers our economic growth, but is also at the forefront of developing a more efficient and cleaner energy future.

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Sincerely,

Ryan

Ryan Jackson

Chief of Staff

U.S. Environmental Protection Agency

Ex. 6 - Personal Privacy

To: Reeder, John[Reeder.John@epa.gov]
From: Korn Ferry PROFILOR
Sent: Tue 6/13/2017 9:17:39 AM
Subject: SURVEY DUE DATE PASSED REMINDER: Feedback for George Hull

Your recommended survey due date has passed. If you take action now your feedback can be included in the participant's report.

If you experience any difficulty getting to the Internet, please contact your internal help desk. For any other technical problems, please send an e-mail to KornFerry_support@datasltn.com.

To complete and submit your confidential survey, please go to this web site:

Ex. 6 - Personal Privacy

User ID: Ex. 6 - Personal Privacy

Password: Ex. 6 - Personal Privacy

--- Email Number 01868500460004501870005391484069326796notify_raters_OS ---
--- Sent To reeder.john@epa.gov ---

To: PMAGList@lists.prograde.net[PMAGList@lists.prograde.net]
From: pmaglist-bounces@lists.prograde.net
Sent: Tue 6/13/2017 2:33:45 AM
Subject: [PMAGList] Check out this HHS video featuring a Presidential Management Fellow Alum
[ATT00001.txt](#)

Recently, the Department of Health and Human Service (HHS) launched a new a multi-part video series featuring employee stories of service, dedication and discovery. The campaign, called *I Am HHS*, shines a spotlight on individuals and their commitment to the mission of HHS. The most recent employee story highlights Michael Sauers, who works at the U.S. Food and Drug Administration leading the Advertising and Promotion Policy team in the Office of Prescription Drug Promotion. In addition to his work at FDA, Michael is also a proud Presidential Management Fellow alum (2003-2005)! Watch and Read Michael's Story – [#IAmHHS: Fighting Misleading Prescription Drug Ad Claims](#)

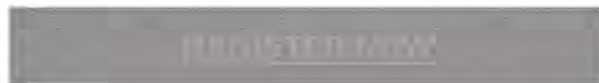
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To manage your subscription to this list visit:
<http://lists.prograde.net/mailman/listinfo/pmaglist>

To: Reeder, John[Reeder.John@epa.gov]
From: CyberSat Summit
Sent: Wed 6/14/2017 6:24:10 PM
Subject: 2 WEEKS LEFT | Early Bird Deadline

Protect Against Cyber Threats

During this 2 day event, get strategic insights from leading cybersecurity experts and satellite industry executives about best practices for achieving end-to-end protection within the entire satellite ecosystem.

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This message was sent to reeder.john@epa.gov

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To: Reeder, John[Reeder.John@epa.gov]
From: Workforce Requirements for Exec Order Workshop
Sent: Tue 6/6/2017 2:32:25 PM
Subject: [SPAM] Learn from 10 Gov Leaders: Workshop to Implement EO Workforce Requirements

**Workforce Requirements
of the President's
Executive Order 13781
Training Workshop
June 28, 2017**

Confirmed Speakers

**Terry Gerton
President & CEO
National Academy of
Public Administration
(NAPA)**

**Bob Corsi
Secretary of Board of
Directors
Senior Executives
Association (SEA)
Former Assistant Deputy
Chief of Staff for
Manpower, Personnel and
Services
Headquarters, U.S. Air
Force**

**Rebecca Ayers
Performance Management
Solutions, OPM**

**Tom Gilbert
Assistant Director of
Strategic Issues, GAO**

**Deb Tomchek
Former Director of Human
Resources (HR)**

DOJ and DOC

Jim Read
Director, Policy and
Evaluation
Merit Systems Protection
Board

Jeffrey Neal
Senior Vice President, ICF
Former CHCO at DLA and
DHS

Lou Kerestesy
Founder & CEO
GovInnovators

Mika Cross
Federal Workplace Expert

**Not Just Human Capital -
Please Review and Forward to
Your Government Executives,
Managers and Staff
Who Play a Part in Meeting the
Workforce Requirements of the
President's Executive Order**

Potomac Forum Training Workshop

**The President's Executive Order:
How to Meet the Workforce
Requirements of the
President's Executive Order
13781
Training Workshop**

***What Federal Executives, Managers,
and Supervisors Need to Know
to Support the Goals of the Executive
Order for
Reforming the Federal Government
and
Reducing the Federal Civilian
Workforce***

**Date: Thursday, June 28,
2017**

Sponsored by:

Potomac Forum, Ltd.
the leader in high quality training since 1984

www.PotomacForum.org
(703) 683-1613
info@PotomacForum.org

**Location of Workshop:
Willard InterContinental Hotel
Washington, D.C.**

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are 100% Educational
and NOT Sales or Marketing Events**

**The Press is Not Permitted to
Encourage
Candid Discussion in our 100%
Learning Environment**

Overview:

The president issued an executive order (EO) on March 13, 2017 which requires agencies to plan and implement long-term workforce reductions and incorporate the plan as a government-wide workforce priority into their Agency Strategic Plan and/or Human Capital Operating Plan.

This Potomac Forum training workshop for government will provide information for agency executives, managers, and staff to respond to the EO.

Experienced human capital executives and experts will share their insight and experience in developing and implementing long-term and near-term workforce management practices that will help attendees understand how best to improve performance, increase accountability, and reduce costs.

This workshop will provide you with practical, easy-to-implement tools and resources to help you achieve the best results through your agency's efforts to restructure, reshape and eliminate inefficient functions to achieve the goals of EO 13781 while enhancing employee performance to increase mission efficacy and increase retention.

What You Will Learn:

- A framework to plan for reorganization and functional consolidation**
- Avoiding common pitfalls to managing performance and**

conduct in the modern workplace

- **Where to find practical support mechanisms, resources and help for managers and supervisors**
- **How to prepare the workforce for activities in cost cutting, reshaping, reducing, and reorganization**
- **Managing change through effective internal and external communications**
- **Driving positive outcomes by leveraging the Federal Employee Viewpoint Survey Results into actionable steps that help cultivate an inclusive culture designed to retain top talent and optimize employee potential**

Why You Should Attend:

- **Learn proven management strategies to demonstrate return on investment, cost savings, and enhanced management efficiencies from developing an effective long-term workforce reduction plan**
- **Understand how to leverage alternative service delivery models and streamline mission support functions to provide greater efficiency while improving quality**
- **Maximize employee performance by focusing on concrete steps to increase performance and effectively deal with poor performers**
- **Optimize employee recognition programs designed to recognize, reward and retain top performers**
- **Build your toolkit for cultivating a culture of engagement and accountability designed to achieve enhanced organizational and individual performance**

Who Should Attend:

- **Federal supervisors and managers**
- **Federal HR practitioners and anyone responsible for implementing agency restructuring plans**
- **Inspector Generals and Staff**
- **Federal employees or members of employee affinity groups**
- **Communications practitioners responsible for leading change management and internal communications campaigns**

Format:

Lecture, guest speakers, and practical exercises.

CEUs Awarded Upon Workshop Completion

Press is NOT Invited to Register or Attend

"Send-A-Team" Registration Fees

No Press to Promote Candid Discussion

Registration and Information:

www.potomacforum.org

Call: (703) 683-1613

Info@PotomacForum.org

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400 North Washington Street, Alexandria, Virginia, 22314, USA

To: Reeder, John[Reeder.John@epa.gov]
From: Chris Johnson
Sent: Tue 6/6/2017 12:01:57 PM
Subject: RE: Meeting Availability

Hi John,

I am following up on the email below that I sent you last week. Would you have 10 minutes for a call in the coming weeks?

Best Regards,

Chris Johnson
General Manager
(843) 971-8499
Chris.johnson@2oceanspromotions.com
www.2oceanspromotions.com

Offices in Charleston, SC, Washington DC, Augusta GA, Atlanta GA

-----Original Message-----

From: Chris Johnson[mailto:chris.johnson@2oceanspromotions.com]
Sent: Wednesday, May 31, 2017 8:00 AM
To: John Reeder reeder.john@epa.gov
Subject: Meeting Availability

Hi John,

Business professionals tell me they are too busy and it takes too much time to browse catalogues and websites to find promotional products, branded merchandise and apparel to use at shows, events and reward employees or thank customers.

We understand that you require on-brand, in-demand promotional products and apparel that your customers, prospects and employees will USE and REMEMBER. With more than 25 years of combined industry experience helping a wide range of businesses from Fortune 50 corporations to local schools and startups, we will lower your spend, simplify the process and ensure on time arrival.

Do you have 10 minutes in the upcoming weeks?

Best regards,

Chris Johnson
General Manager
(843) 971-8499

Chris.johnson@2oceanspromotions.com
www.2oceanspromotions.com

Offices in Charleston, SC, Washington DC, Augusta GA, Atlanta GA

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Delivered by



To: Reeder, John[Reeder.John@epa.gov]
From: Gov Workforce Performance & Responding to EO
Sent: Wed 6/14/2017 3:34:27 PM
Subject: [SPAM] June 28th - Now 14 Gov Leaders to Speak: Managing Gov Performance & Implementing EO Workforce Requirements

**Workforce Requirements
of the President's
Executive Order 13781
Training Workshop
June 28, 2017**

Confirmed Speakers
Terry Gerton
President & CEO
National Academy of
Public Administration
(NAPA)

Bob Corsi
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Senior Executives
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Former Assistant Deputy
Chief of Staff for
Manpower, Personnel and
Services
Headquarters, U.S. Air
Force

Rebecca Ayers
Performance Management
Solutions, OPM

Tom Gilbert
Assistant Director of
Strategic Issues, GAO

Deb Tomchek
Former Director of Human
Resources (HR)

DOJ and DOC

Jim Read
Director, Policy and
Evaluation
Merit Systems Protection
Board

Jeffrey Neal
Senior Vice President, ICF
Former CHCO at DLA and
DHS

Dr. Fred Soto
Supervisory Manager for
Employee Engagement,
Diversity and Veterans
Outreach
Office of Energy
Efficiency and Renewable
Energy
Department of Energy

Kimberly Steide
Program Manager for
Human Capital Planning,
HRSTAT, and Metrics
Department of the
Treasury

Dianne Hawkins
Program Manager,
Personnel Demonstration
Project
U.S. Army Research
Laboratory

Marcus Brownrigg
Strategic Partnership and
Communications
Advisorz

Office of the CEO
Corporation for National

**Improving Performance -
Workshop Not For Just Human
Capital -
Please Review and Forward to
Your Government Executives,
Managers and Staff
Who Play a Part in Meeting the
Workforce Requirements of the
President's Executive Order**

Potomac Forum Training Workshop

**The President's Executive Order:
How to Meet the Workforce
Requirements of the
President's Executive Order
13781
Training Workshop**

***What Federal Executives, Managers,
and Supervisors Need to Know
to Support the Goals of the Executive
Order for
Reforming the Federal Government
and
Reducing the Federal Civilian
Workforce***

**Date: Thursday, June 28,
2017**

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Lou Kerestesy
Founder & CEO
GovInnovators

Location of Workshop:
Willard InterContinental Hotel
Washington, D.C.

Mika Cross
Federal Workplace Expert

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- **Avoiding common pitfalls to managing performance and conduct in the modern workplace**
- **Where to find practical support mechanisms, resources and help for managers and supervisors**
- **How to prepare the workforce for activities in cost cutting, reshaping, reducing, and reorganization**
- **Managing change through effective internal and external communications**
- **Driving positive outcomes by leveraging the Federal Employee Viewpoint Survey Results into actionable steps that help cultivate an inclusive culture designed to retain top talent and optimize employee potential**

Why You Should Attend:

- **Learn proven management strategies to demonstrate return on investment, cost savings, and enhanced management efficiencies from developing an effective long-term workforce reduction plan**
- **Understand how to leverage alternative service delivery models and streamline mission support functions to provide greater efficiency while improving quality**
- **Maximize employee performance by focusing on concrete steps to increase performance and effectively deal with poor performers**
- **Optimize employee recognition programs designed to recognize, reward and retain top performers**
- **Build your toolkit for cultivating a culture of engagement**

**and accountability designed to achieve enhanced
organizational and individual performance**

Format:

Lecture, guest speakers, and practical exercises.

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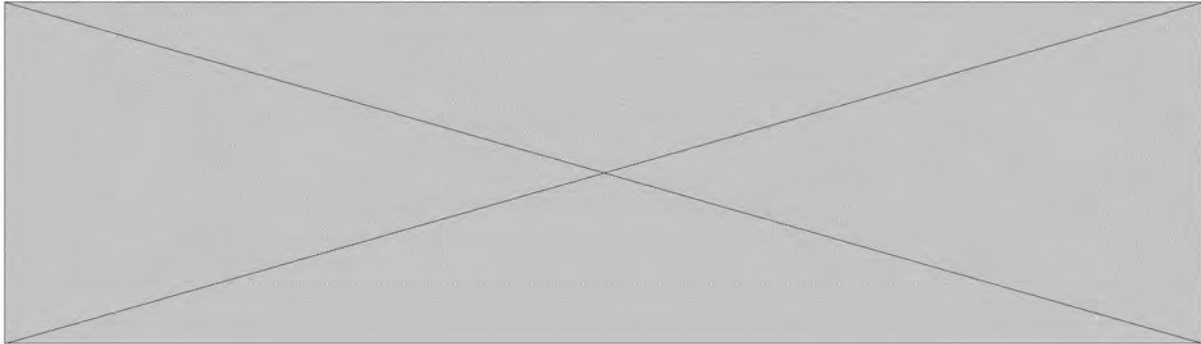
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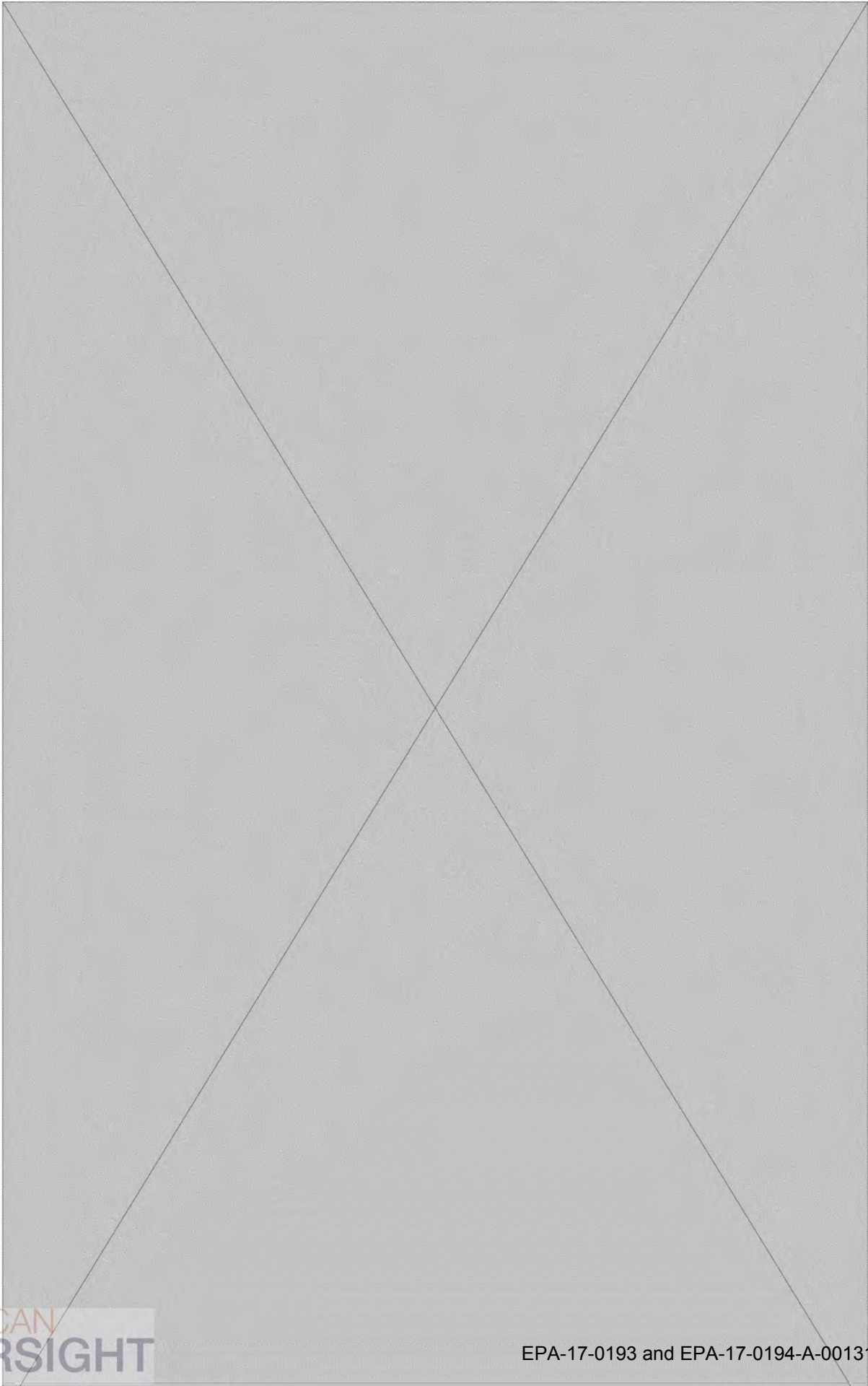
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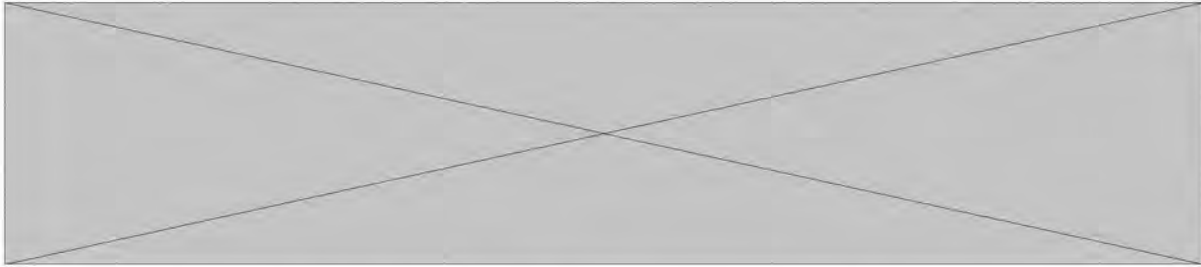
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To: Reeder, John[Reeder.John@epa.gov]
From: International Commerce and Marketing Corp.
Sent: Wed 6/14/2017 3:20:31 PM
Subject: ATTENTION - OCONUS Customers! Get Door to Door Shipping to Your Facility for Nearly 2 Million Contract Items!







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To: Reeder, John[Reeder.John@epa.gov]
From: DC5G Summit
Sent: Wed 6/14/2017 3:09:33 PM
Subject: Join the 5G community!

Registration is open for the DC5G Summit!

Secure your seat today to take advantage of Loyalty rates, only in effect until June 29!

Why do you need to be involved with #DC5G?

The inaugural DC5G Summit will focus on the market opportunities for the 5G-connected hybrid ecosystem. Bringing together telecommunications and satellite services under one roof creates a unique environment that isn't happening at any other event. At #DC5G, you will be a part of conversations that will lead the industry towards a more powerful, more connected 5G network that will take our world into the next generation of mobility.

Who will attend #DC5G?

The entire ecosystem of professionals needed for the success of the 5G environment will be at the DC5G Summit: wireless communications service providers, satellite service providers, handheld device and hardware manufacturers, innovative adopters of 5G capabilities, FCC representatives, and more.

What's included with your DC5G Summit registration?

Everything! Your Summit Pass gives you access to the entire program, networking breaks, Power Lunch and the Evening Reception in the Fireview Room, so you'll have plenty of opportunities to shake hands and strike up conversations with all attendees at the Summit.

**Not ready to register? Join our mailing list to stay up to date on
#DC5G!**

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To: Reeder, John[Reeder.John@epa.gov]
From: CSO Events
Sent: Mon 6/12/2017 5:20:40 PM
Subject: Last Chance: Free Pass to IT Security Conference in D.C.

Leading IT and security executives are coming together on June 21st in McLean, VA for the SecurIT Conference - Attend free!

SecurIT is a special one-day conference that **will provide a holistic view of the conversations that need to happen around risk today. Do you have the right mix of defenses? Are you spending the right amount on compliance vs. third-party concerns vs. employee awareness training? As your business transforms in the digital age, how do you ensure your culture assumes a security mindset?**

Discuss these issues and more with peers and our roster of CIO and CISO speakers with best practices and insights to share.

Get your free conference pass at: <http://securitidg.com/June2017/RSVP>

Join hundreds of IT and security professionals already signed up to participate from organizations such as Aerospace Corporation, Blue Cross Blue Shield, Capital One, Department of Defense, E*TRADE, FBI, Kaiser Permanente, Marriott International, Merck, Pepsi-Co, Sony Corporation, The George Washington University, U.S. Coast Guard, USDA, Western Union, and many more!

Sessions include:

Defining Risk in 2017

Elizabeth Hackenson, CIO & SVP, Technology & Services, AES Corp.
Scott Goodhart, VP & CISO, AES Corp.
Bob Bragdon, Publisher, CSO

Data Destruction in the IoT Era

Sameer Sait, VP, IT & CSO, Arrow

Building a World Class Security Program

Mark Maybury, VP & CSO; Director, NIST National Cybersecurity FFRDC, MITRE Corp.

Managing the IT/Security Relationship

Rodrigo Loureiro, CISO, Laureate International Universities
Ben Sizemore, CIO, First Guaranty Mortgage Corp.
Bob Bragdon, Publisher, CSO

Winning Strategies for IoT and New Business Ventures

Lisa Tuttle, CISO, SPX Corp.

Publisher's Panel: Securing the Evolving IT Environment

Mark Loucks, Senior Data Scientist, Principal Practice Director, Unisys
Bob Bragdon, Publisher, CSO

The Threat from Within: How to Minimize Insider Threats

Jeff Berkin, SVP & CSO, CACI International

Managing Third-Party Risk in the IT Supply Chain

Andy Purdy, CSO, Huawei Technologies USA

Building Credibility with Senior Business Leadership: A CIO/CISO Panel

Jeff Berkin, SVP & CSO, CACI International

Derrick A. Butts, CIO, Truth Initiative

Andy Purdy, CSO, Huawei Technologies USA

Chad Sheridan, CIO, Risk Management Agency, Department of Agriculture/USDA

Bob Bragdon, Publisher, CSO

And more!

Learn more at: <http://www.securitidg.com>

Register now at: <http://securitidg.com/June2017/RSVP>

Event Details:

IDG's Security Day Conference – SecurIT

June 21, 2017

8:00am – 5:30pm

The Ritz-Carlton Tysons Corner

McLean, VA.

We hope you can join us on June 21st!

Regards,
CSO Events

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To: Reeder, John[Reeder.John@epa.gov]
From: Granicus
Sent: Wed 6/14/2017 3:04:12 PM
Subject: Level up

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Taking Your Communications to the Next Level

July 12, 2017 | 8:30 - 10:30 AM

1152 15th Street NW, Suite 800, Washington, D.C. 20005

**REGISTER
NOW**

**You can achieve greater digital engagement! All it
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Being more mature as an organization means taking time to measure how your programs and campaigns are performing, checking the quality of your messages and putting best practices into place.

Register today for a free Digital Engagement Training on July 12, from 8:30 - 10:30 a.m. in Washington, D.C. to learn how to level up your digital communication to achieve greater outcomes.

REGISTER NOW

You Will Learn How To:

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current digital engagement
abilities**

**Measure your performance
and identify improvement
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**Address hiring and
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successful staffing
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To: Reeder, John[Reeder.John@epa.gov]
From: CSO Events
Sent: Tue 6/6/2017 11:28:28 AM
Subject: You're Invited: IT Security Conference on June 21

Leading IT and security executives are coming together on June 21st in McLean, VA for the SecurIT Conference - Attend free!

SecurIT is a special one-day conference that **will provide a holistic view of the conversations that need to happen around risk today.**

Join hundreds of IT and security professionals already signed up to participate from organizations such as **Aerospace Corporation, Blue Cross Blue Shield, Capital One, Department of Defense, E*TRADE, FBI, Kaiser Permanente, Marriott International, Merck, Pepsi-Co, Sony Corporation, The George Washington University, U.S. Coast Guard, USDA, Western Union**, and many more!

Get your free conference pass at: <http://securitidg.com/June2017/RSVP>

Sessions include:

Defining Risk in 2017

Elizabeth Hackenson, CIO & SVP, Technology & Services, AES Corp.
Scott Goodhart, VP & CISO, AES Corp.

Building a World Class Security Program

Mark Maybury, VP & CSO; Director, NIST National Cybersecurity FFRDC, MITRE Corp.

Managing the IT/Security Relationship

Rodrigo Loureiro, CISO, Laureate International Universities

Winning Strategies for IoT and New Business Ventures

Lisa Tuttle, CISO, SPX Corp.

Containing Insider Threats

Jeff Berkin, SVP & CSO, CACI International

Managing Third-Party Risk in the IT Supply Chain

Andy Purdy, CSO, Huawei Technologies USA

Building Credibility with Senior Business Leadership: A CIO/CISO Panel

Bob Bragdon, Publisher, CSO

Andy Purdy, CSO, Huawei Technologies USA

Chad Sheridan, CIO, Risk Management Agency, Department of Agriculture/USDA

And more!

Learn more at: <http://www.securitidg.com>

Register now at: <http://securitdg.com/June2017/RSVP>

Event Details:

IDG's Security Day Conference – SecurIT

June 21, 2017

8:00am – 5:30pm

The Ritz-Carlton Tysons Corner

McLean, VA.

We hope you can join us on June 21st!

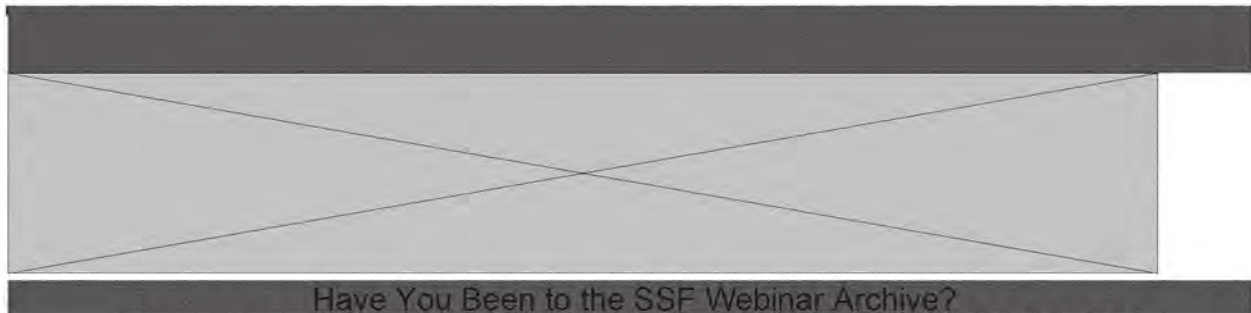
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To: Reeder, John[Reeder.John@epa.gov]
From: Security and Sustainability Forum
Sent: Mon 6/5/2017 10:16:31 AM
Subject: Janos Pasztor, Former UN Assistant General Secretary, Joins the Climate Ethos Webinar - June 8th

How sustainable are the global climate commitments?

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Have You Been to the SSF Webinar Archive?

Janos Pasztor Joins Katharine Hayhoe and Alice Hill in the Climate Ethos Webinar

See bios below

How Sustainable is Our Global Climate Ethos

June 8, 2017
1:15 to 2:45 PM EST



Timely that our next webinar is about *climate action commitment* without US Government Leadership.



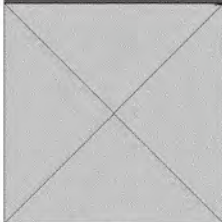
Building on decades of work across the globe by the public and private sectors, has a shared global climate ethos -- a sense of collective commitment and common purpose -- reached a tipping point?

- **Are the Paris Agreement and the growing number of cities adopting carbon-based energy goals evidence of that? How durable are these actions?**

- Is a sense of common purpose sustainable without US federal government coordination and leadership? What roles do sub-national and municipal governments play?
- **How can business, security, religious, and civil society actors continue and even accelerate efforts to reduce emissions? Can they work together to avoid the worst climate impacts?**
- Is the global commitment to climate solutions shallow or deep?
- **How can moral, scientific and political imperatives find common ground?**
- Does the global climate ethos include extracting, storing and reusing carbon already in the atmosphere?
- **Where do opportunities for collaborative innovation exist?**

Join Arizona State University and global governance, business, science, policy and faith leaders in a 90 minute webinar to explore the depth and breadth of a global climate ethos and the direction of plausible, innovative climate action emerging across sectors and among global societies.

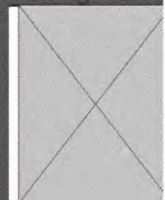
Meet the Panel



**Elisabeth
Graffy**

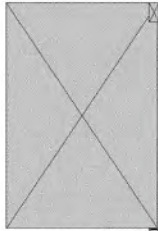
Elisabeth Graffy will moderate the webinar. Elisa is Professor of Practice in the School for the Future of Innovation in Society and in the Consortium for Science, Policy and Outcomes) at Arizona State University. She co-directs the Energy and Society program within ASU-LightWorks and co-leads the Environmental Humanities Initiative in the Global Institute of Sustainability (GIOS). She founded and directs the Spirituality and Sustainability Initiative and the Household Independent Power Project, as well as the Center for Energy and Society

Alice C. Hill is a Research Fellow at the Hoover Institution where her work focuses on building



Alice Hill

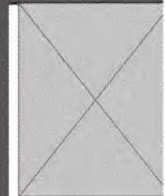
resilience to destabilizing catastrophic events, including the impacts of climate change. Prior to joining Hoover, she served as Special Assistant to the President and Senior Director for Resilience Policy for the National Security Council. While at the White House, Alice led the development of national policy regarding national security and climate change, incorporation of climate resilience considerations into international development, Federal efforts in the Arctic, building national capabilities for long-term drought resilience, and establishment of national risk management standards for three of the most damaging natural hazards.



Katharine Hayhoe

Katharine Hayhoe is a professor in the Department of Political Science and Director of the Climate Science Center at Texas Tech University, part of the Department of Interior's South-Central Climate Science Center and founder and CEO of

ATMOS Research. Katharine's research focuses on establishing a scientific basis for assessing the regional to local-scale impacts of climate change on human systems and the natural environment.



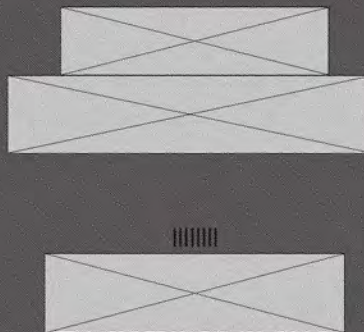
Janos Pasztor

New SSF Series on Green Technology

Janos Pasztor is Carnegie Council senior fellow and executive director of the Carnegie Climate Geoengineering Governance Initiative (C2G2). He has over 35 years of work experience in the areas of energy, environment, climate change, and sustainable development. Before taking up his current assignment he was UN assistant secretary-general (SG) for climate change in New York under Secretary-General Ban Ki-moon. Earlier, he was acting executive director for conservation (2014) and policy and science director (2012-2014) at WWF International. He directed the UNSG's Climate Change Support Team (2008-2010) and later was executive secretary of the UNSG's High-level Panel on Global Sustainability (2010-2012), among many other leadership roles.

This webinar seeks to inspire local conversations and ideas to advance cross-sectoral collaborations.

We'll also share resources to support a climate ethos dialogue in your community.



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Solar Hot Water Systems - What you Need to Know
Residential/Commercial/Industrial Uses
June 28, 2017
1:15 to 2:15 PM EDT



**This is the first in a new SSF series on technology called
- Going Green Without Going Into the Red -**

Solar energy can be used in several ways to heat water for domestic, commercial and industrial uses. Examples include photo voltaic cells to generate electricity for hot water heaters and both passive and active thermal solar systems for direct heat. ***With the cost of solar equipment dropping, there are significant savings in solar hot water, but what are the considerations in determining which technology is best for your situation?***

In this 60-minute webinar, renewable energy expert **Scott Sklar** will review the pros and cons of investing in a solar hot water system (residential, commercial and industrial uses) and what to consider in making the investment decision. ***We will also hear from Arden Steiner, co-founder of Rayviance. The firm has added innovations to its license for a solar hot water technology based on a pump free thermosyphon convection flow system.*** Arden has installed the system in a number of commercial and residential sites and will present them as case studies in the webinar. He will explain why Rayviance has significant operational and cost advantages over the alternatives. Scott will question Arden about the technology and its advantages.

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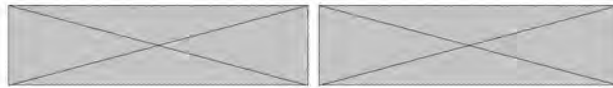
SSF convenes global experts in free educational webinars about critical climate risk topics such as urban resilience, the food - water - energy nexus, droughts and flooding, green infrastructure, public health, renewable energy, and global climate security, among others. **Don't unsubscribe if you are interested in some of these topics and you will continue to receive webinar alerts.**

Access the arsenal of free climate education webinar recordings in the SSF archives.

<http://securityandsustainabilityforum.org/archives/webinars>



Edward Saltzberg, Ph.D.
Managing Director
Security and Sustainability Forum



The Security and Sustainability Forum, 1006 N Tuckahoe Street, Falls Church, VA 22046

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From: Gov Records Management Training Workshop XIV
Sent: Mon 6/12/2017 4:36:37 PM
Subject: [SPAM] Next Tuesday: Gov Records Management Training Workshop

Records Management in Government Training Workshop XIV

*Agency Self Assessments are in to NARA
- How Can You Improve Your Scores?*

**Managing Government Records Directive Updates:
What Agencies Need to Do for 2017 and Beyond
Lessons Learned and Best Practices**

**June 20, 2017
Willard InterContinental Hotel
Washington, D.C.**

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Keynote Speakers:

Don Rosen
Director of Records Management Oversight and Reporting
National Archives and Records Administration (NARA)
and
Arian Ravanbakhsh
Manager, Policy and Program Support Team
National Archives and Records Administration (NARA)

Additional Government Speakers
Matthew Olsen

Acting Chief Privacy and Data Sharing Officer
Acting Executive Director
Office of Privacy & Information Management (PIM)
U.S. Department of Health and Human Services

Mark Patrick
Chief, Information Management Division
The Joint Staff Secretariat
Department of Defense

Additional Government Speakers to be Announced Soon

Overview:

This one-day Potomac Forum Workshop will focus on the activities mandated by the NARA/OMB Records Management Directive. Key executives from NARA and government agencies will discuss the directive and its implementation. Detailed review and analysis of the directive will be presented to help agencies better understand what they need to do, how to do it, and how to get the funding necessary to be successful.

This workshop will examine the Senior Agency Official for Records Management report to NARA to determine what steps are required to fill the gaps

**Potomac Forum Workshops are Not Conferences
We are 100% Educational Events**

Government and Industry Partners are Invited to Register

Format:

This workshop will combine keynote presentations by NARA, lectures on implementing the Directive, real world examples and discussions to provide a thorough, enjoyable day of learning.

Workshops are NOT Sponsored by Advertisers or Paid

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"Send a Team" Rates

The Previous Thirteen Potomac Forum Records Management Workshops
on Email, Records Management and the OMB/NARA Directive were
Rated as "Excellent" by Workshop Attendees
CEU Credits Awarded

Workshop for Government and Industry Partners

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400 North Washington Street, Alexandria, Virginia, 22314, USA

To: Reeder, John[Reeder.John@epa.gov]
From: Steven Hughes
Sent: Wed 6/14/2017 1:15:27 PM
Subject: your certification options

John —

We have two certification programs coming up in July and early August and I wanted to see if you wanted to sign up for one.

Certified Government Performance Manager (CGPM)

On July 17-20, we're holding the next core course in this program covering Strategic Planning and Performance Measurement for Government. This is the foundation course for the certification — or you can simply receive a certificate in the core course topics. This program is timely as it addresses the latest performance measurement and government reorganization mandates in the FY 18 budget.

Govt Lean Six Sigma Green Belt (LSS)

On July 31 to August 4 we are offering our Government Lean Six Sigma certification course. This will help you lead process improvement projects within your government agency and will make you quite marketable long term in both government and the private sector.

Would you like to reserve a spot in either program? We have some discounts available if you sign up in the next week or two. Let me know if you're interested, and I'll send you the materials.

Thanks,

Steven Hughes
Deputy Director, Outreach
[The Performance Institute](#)

You're receiving this email because you're a past participant in Performance Institute events or a public official. This email was sent to reeder.john@epa.gov.

Our mailing address is:

Performance Institute, LLC
1440 G St NW

Washington, DC - DISTRICT OF COLUMBIA 20005

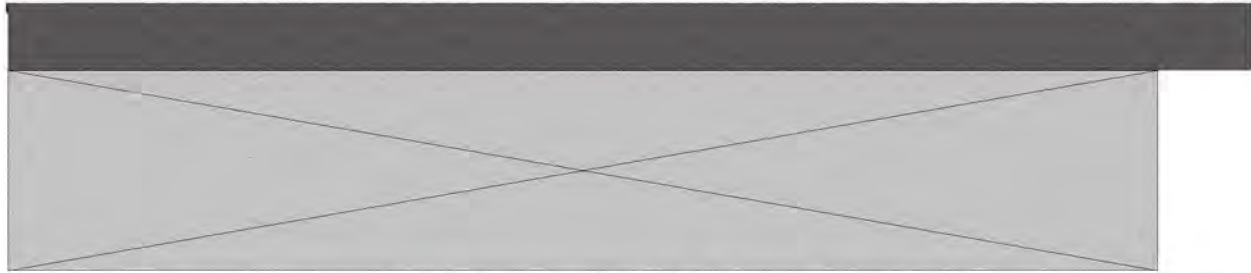
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To: Reeder, John[Reeder.John@epa.gov]
From: Security and Sustainability Forum
Sent: Wed 6/14/2017 10:17:05 AM
Subject: Save the Date - Cities on the Leading Edge of Resilience - July 13, 2017

National League of Cities and Arizona State University Webinar

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Arizona State University and The National League of Cities

Host the webinar on

Cities on the Leading Edge of Resilience

July 13, 2017

1:15 to 2:45 PM EST



The private sector and all levels of government are embracing resilience as a holistic, proactive framework to reduce risk, improve services, adapt to changing conditions, and empower citizens. Recent high profile programs, such as the \$1 billion National Disaster Resilience Competition initiated by the US Department of Housing and Urban Development and the Rockefeller Foundation's 100 Resilient Communities, have helped define and advance this resilience framework for local government.

In 2016, the National League of Cities (NLC) launched a Leadership in Community Resilience program to help elected officials, city staff, and community partners share their experiences and advance local resilience efforts. The pilot initiative is providing technical assistance and professional development opportunities for 10 cities by

supporting local resilience. **New SSF Series on Green Technology** each city. This webinar, hosted by Arizona State University and NLC, will spotlight several cities and share their process for planning, building engagement, and implementing resilience initiatives with limited resources.

Managers and more details will be announced shortly, but registration is open.



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Solar Hot Water Systems - What you Need to Know Residential/Commercial/Industrial Uses

June 28, 2017

1:15 to 2:15 PM EDT



This is the first is a new SSF series on technology called
- Going Green Without Going Into the Red -





Solar energy can be used in several ways to heat water for domestic, commercial and industrial uses. Examples include photo voltaic cells to generate electricity for hot water heaters and both passive and active thermal solar systems for direct heat. ***With the cost of solar equipment dropping, there are significant savings in solar hot water, but what are the considerations in determining which technology is best for your situation?***

In this 60-minute webinar, renewable energy expert **Scott Sklar** will review the pros and cons of investing in a solar hot water system (residential, commercial and industrial uses) and what to consider in making the investment decision. ***We will also hear from Arden Steiner, co-founder of Rayviance. The firm has added innovations to its license for a solar hot water technology based on a pump free thermosyphon convection flow system.*** Arden has installed the system in a number of commercial and residential sites and will present them as case studies in the webinar. He will explain why Rayviance has significant operational and cost advantages over the alternatives. Scott will question Arden about the technology and its advantages.

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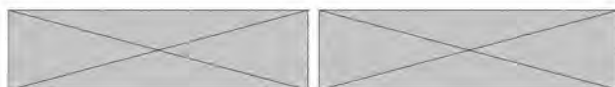
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Edward Saltzberg, Ph.D.
Managing Director
Security and Sustainability Forum



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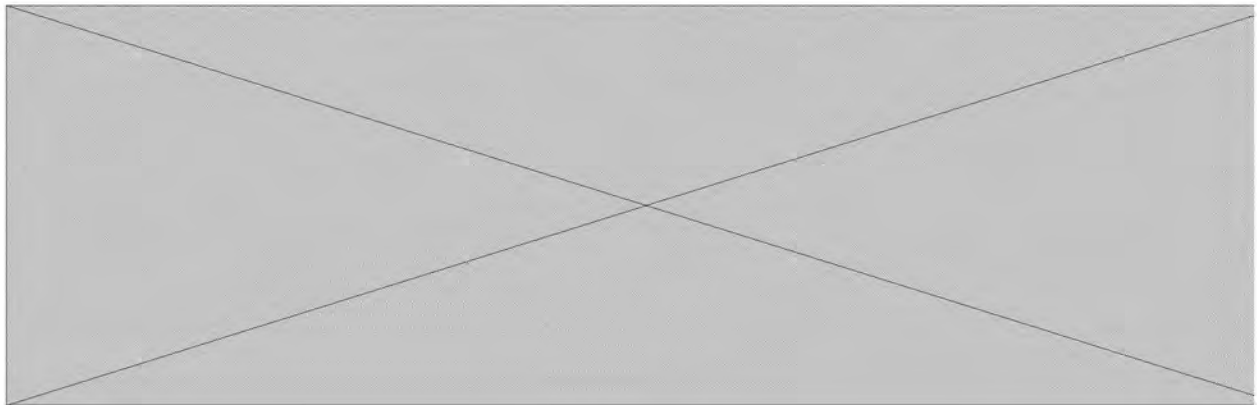
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Sent: Tue 6/13/2017 7:22:08 PM
Subject: SAP TechEd Las Vegas: Register Now and Save \$300!



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From: IDG Connect
Sent: Sat 6/3/2017 1:17:13 PM
Subject: News Roundup: Apple Neural Engine, Stratolaunch, & Subtitle Viruses



[AI will cut medical errors, improve cancer diagnosis](#)

[UiPath leads march of the software robots](#)

[With Djingo, Orange plans to take on Alexa in your home](#)

[News Roundup: Apple Neural Engine, Stratolaunch, & subtitle viruses](#)

Much to the chagrin of its suppliers, Apple has long been working towards making all its own chips. This goal now applies to its Artificial Intelligence hardware, too. According to Bloomberg, the Cupertino company is working on a processor specifically designed to improve the performance of AI-related tasks such as speech and image recognition within its devices. Apple has refused to comment, but Bloomberg claims the project will be called the Apple Neural Engine. Google has already made a similar move with the Tensor Processing Unit (TPU), which powers AI-related tasks in the search giant's datacentres.

Read the rest of this week's tech news roundup [here](#).

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Opinion, analysis and interviews across the technology industry

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Sent: Mon 6/5/2017 3:20:09 PM
Subject: [SPAM] Xamarin Cross Platform Development Bundle (96% off)



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You don't need to learn both Java and Swift to build apps for Android and iOS. With Xamarin, you can use the C# programming language to build fully-functional apps for iOS and Android at the same time. Because Xamarin developers can stream the app-building process so much, companies are demanding them in a big way. This is the perfect course bundle to put you on the path to making big money in Xamarin development.

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TigerVPN: Lifetime Subscription (95% off)

TrackOFF Privacy Software for Windows (69% off)

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From: Hughes Government Solutions
Sent: Tue 6/13/2017 5:37:40 PM
Subject: Master the Art of Digital Info-Tainment!

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Dear John,

Your agency's communications deserve to get noticed!

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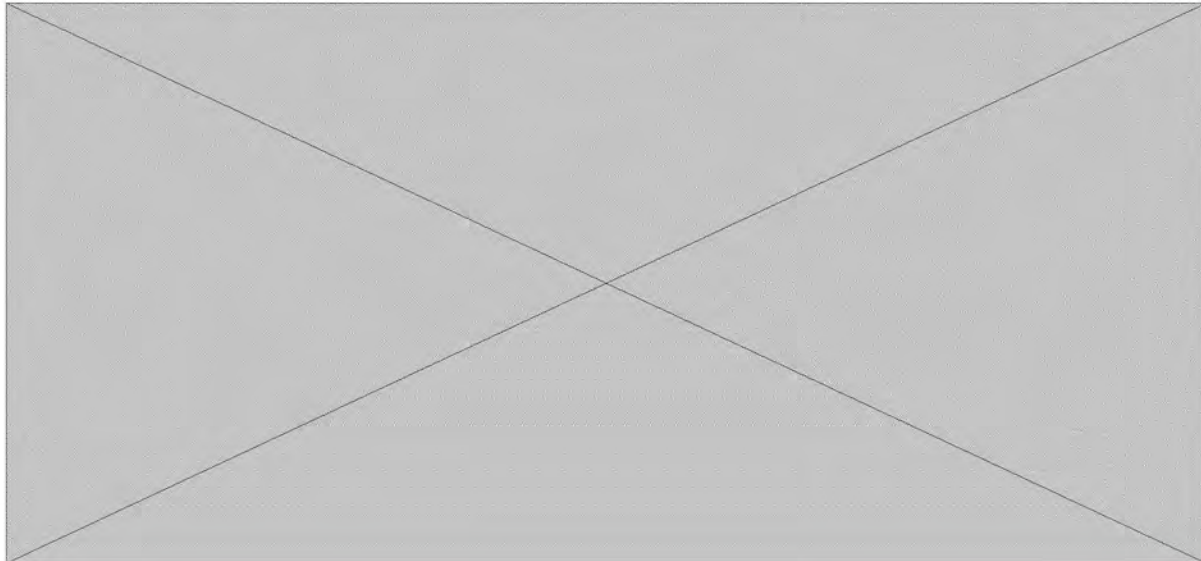
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To: Reeder, John[Reeder.John@epa.gov]
From: Sustainable City Network
Sent: Mon 6/5/2017 7:09:58 PM
Subject: Learn how to create sustainability plans - online course July 11-13

Sustainable City Network will present an online training course for any personnel who are responsible for developing sustainability plans, greenhouse gas emission inventories, climate action plans or any sustainability strategy for a community, business or institution.

This course will be presented in three 2-hour sessions held on consecutive days, July 11, 12 and 13, 2017. Class sessions will begin promptly at 10 a.m. Pacific, 11 a.m. Mountain, noon Central and 1 p.m. Eastern. The sessions will be recorded so registrants may attend live or via on-demand streaming video.

This course will focus on the implementation and strategic thinking that is required to implement a Sustainability Plan. Too often, we write a plan and have the greatest intentions of implementing all of the metrics only to have these ideas fall flat because of politics, organizational culture, or lack of support from the top. This course will teach you how to incorporate storytelling and systems thinking into a strategic plan that gets your plan implemented and enables you to move the needle further and faster to create a more sustainable community.

WHO SHOULD ATTEND

This course is appropriate for municipal, state and federal government employees, educational and healthcare institution personnel and private-sector consultants or sustainability managers responsible for developing sustainability plans, greenhouse gas emission inventories, climate action plans and/or sustainability initiatives of any kind.

Class Format

This course consists of three 2-hour online sessions that take place on Tuesday, Wednesday and Thursday, July 11, 12 & 13, 2017. Each registrant will be provided with electronic copies of course materials prior to the online course.

Classes will include lecture and Q & A utilizing the GoToWebinar.com platform. A quiet room and a reliable Internet connection are required to take this course. See GoToWebinar.com for technical requirements.

Certificates of completion will be provided to all attendees after the final session.

Dates and Tuition

Each session will begin promptly at 10 a.m. Pacific Time, which is 11 a.m. Mountain Time, noon Central Time and 1 p.m. Eastern Time.

Registration is free for all participants. A \$25 fee for materials and a \$25 fee for a certificate of completion will be charged to all participants.

Classes are held in English.

For more information, please contact info@americanoversight.org or call **GroupRate3-5**

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This course is presented by Sustainable City Network.

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×

To: Reeder, John[Reeder.John@epa.gov]
From: Austin Fageol
Sent: Tue 6/13/2017 4:59:02 PM
Subject: Briefing with your team

John —

Do you have time to connect this week or next to discuss where your program is in addressing the new management initiatives being pushed by OMB?

In addition to our regularly-scheduled trainings and policy forums, the Performance Institute is being brought in-house to government agencies to do customized briefings and facilitation sessions. It saves on time and is more of a working session with our team.

Sessions cover the whole range of management initiatives: updating performance measures, using data analytics, crafting restructuring plans, customer service improvement, budget justifications, risk management, and more.

Would you be interested in considering an in-house program for your team? Who should I follow-up with?

Best,

Thanks,

Austin Fageol
Director, Outreach
The Performance Institute

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To: Reeder, John[Reeder.John@epa.gov]
From: Megan Pingatore
Sent: Mon 6/5/2017 5:19:54 PM
Subject: Fw: Here is your VIP Code!

Hi John

Hope you had a fabulous Memorial Day weekend! I just wanted to make sure you got my email last week. As a *Via Satellite* subscriber, I wanted to make sure you did not miss your \$170 coupon off your CyberSat Summit registration – make sure you register before **Wednesday, June 7th**.

Let me know if you have any questions! [Here is the registration link.](#)

Cheers!

Megan Pingatore
Marketing Manager, *Aerospace*

9211 Corporate Blvd., 4th Fl
Rockville, MD 20850

clientservices@accessintel.com
1-888-707-5814

From: Via Satellite
Date: Friday, May 26, 2017
To: Megan Pingatore
Subject: Here is your VIP code!

Dear John,

As a loyal subscriber to Via Satellite, I'd like you to be the first to know that registration is now open for the [2017 CyberSat Summit](#) taking place November 7-8 at the Tysons Corner Marriott in Tysons Corner, VA.

We've set up a special discount code just for you - use the code **VIAVIP** during registration online and you'll **save an extra 10% off our Early Bird rate!** [Register here](#) to secure this rate.

At this two day event, you will get strategic insights from leading cybersecurity experts and satellite industry executives about best practices for achieving end-to-end protection within the entire satellite ecosystem. The agenda will include:

- **New Generation of Cyberattacks:** Assessment of the evolving threat landscape in satellite
- **Fact vs. Myth:** What we know so far as it relates to cyber-attacks in aerospace and satellite
- **Open Systems vs. Purpose Built Solutions:** Pros and Cons
- **A Cybersecurity Framework for Space:** What needs to be done
- **The FCC Communications Security, Reliability and Interoperability Council (CSRIC) WG4:** What we can learn
- **The NIST Framework:** The need for it and where it can be improved
- *And more!*

Register by June 7th to get an extra 10% off of the early bird discount! If you prefer to register by phone, call 1-888-707-5814.

Hope to see you in November! Feel free to reach out to me with any questions.

Megan Pingatore
Marketing Manager, *Aerospace*

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Rockville, MD 20850
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1-888-707-5814

P.S. Group discounts are also available! Contact me directly at mpingatore@accessintel.com to get information on reduced registrations for your group!

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From: Security and Sustainability Forum
Sent: Fri 6/2/2017 8:32:06 PM
Subject: Panel Set for "How Sustainable are the Paris Climate Commitments?" - June 8th Webinar

Janos Pasztor, former UN Assistant General Secretary for Climate Change, joins the panel

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Have You Been to the SSF Webinar Archive?
**Janos Pasztor Joins Katharine Hayhoe and Alice Hill in the
Climate Ethos Webinar**
See bios below

How Sustainable is Our Global Climate Ethos

June 8, 2017
1:15 to 2:45 PM EST



**Timely that our next webinar is about *climate action commitment* without US
Government Leadership.**



Building on decades of work across the globe by the public and private sectors, has a shared global climate ethos -- a sense of collective commitment and common purpose -- reached a tipping point?

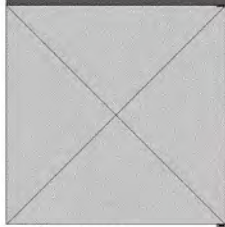
- **Are the Paris Agreement and the growing number of cities adopting carbon-based energy goals evidence of that? How durable are these actions?**
- **Is a sense of common purpose sustainable without US federal government coordination**

and leadership? What roles do sub-national and municipal governments play?

- **How can business, security, religious, and civil society actors continue and even accelerate efforts to reduce emissions? Can they work together to avoid the worst climate impacts?**
- Is the global commitment to climate solutions shallow or deep?
- **How can moral, scientific and political imperatives find common ground?**
- Does the global climate ethos include extracting, storing and reusing carbon already in the atmosphere?
- **Where do opportunities for collaborative innovation exist?**

Join Arizona State University and global governance, business, science, policy and faith leaders in a 90 minute webinar to explore the depth and breadth of a global climate ethos and the direction of plausible, innovative climate action emerging across sectors and among global societies.

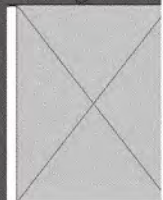
Meet the Panel



**Elisabeth
Graffy**

Elisabeth Graffy will moderate the webinar. Elisa is Professor of Practice in the School for the Future of Innovation in Society and in the Consortium for Science, Policy and Outcomes) at Arizona State University. She co-directs the Energy and Society program within ASU-LightWorks and co-leads the Environmental Humanities Initiative in the Global Institute of Sustainability (GIOS). She founded and directs the Spirituality and Sustainability Initiative and the Household Independent Power Project, as well as the Center for Energy and Society

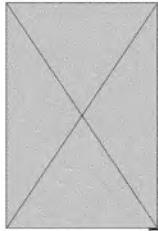
Alice C. Hill is a Research Fellow at the Hoover Institution where her work focuses on building



Alice Hill

resilience to destabilizing catastrophic events, including the impacts of climate change. Prior to joining Hoover, she served as Special Assistant to the President and Senior Director for Resilience Policy for the National Security Council. While at the White House, Alice led the development of national policy regarding national security and climate change, incorporation of climate resilience considerations into international development, Federal efforts in the Arctic, building national capabilities for long-term drought resilience, and establishment of national risk management standards for three of the most damaging natural hazards.

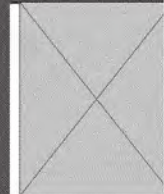
Katharine



Hayhoe

Katharine Hayhoe is a professor in the Department of Political Science and Director of the Climate Science Center at Texas Tech University, part of the Department of Interior's South-Central Climate Science Center and founder and CEO of

ATMOS Research. Katharine's research focuses on establishing a scientific basis for assessing the regional to local-scale impacts of climate change on human systems and the natural environment.



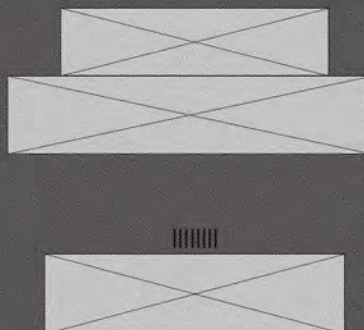
**Janos
Pasztor**

New SSF Series on Green Technology

Janos Pasztor is Carnegie Council senior fellow and executive director of the Carnegie Climate Geoengineering Governance Initiative (C2G2). He has over 35 years of work experience in the areas of energy, environment, climate change, and sustainable development. Before taking up his current assignment he was UN assistant secretary-general (SG) for climate change in New York under Secretary-General Ban Ki-moon. Earlier, he was acting executive director for conservation (2014) and policy and science director (2012-2014) at WWF International. He directed the UNSG's Climate Change Support Team (2008-2010) and later was executive secretary of the UNSG's High-level Panel on Global Sustainability (2010-2012), among many other leadership roles.

This webinar seeks to inspire local conversations and ideas to advance cross-sectoral collaborations.

We'll also share resources to support a climate ethos dialogue in your community.



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Solar Hot Water Systems - What you Need to Know

Residential/Commercial/Industrial Uses

June 28, 2017

1:15 to 2:15 PM EDT



This is the first in a new SSF series on technology called
- *Going Green Without Going Into the Red* -

Solar energy can be used in several ways to heat water for domestic, commercial and industrial uses. Examples include photo voltaic cells to generate electricity for hot water heaters and both passive and active thermal solar systems for direct heat. ***With the cost of solar equipment dropping, there are significant savings in solar hot water, but what are the considerations in determining which technology is best for your situation?***

In this 60-minute webinar, renewable energy expert **Scott Sklar** will review the pros and cons of investing in a solar hot water system (residential, commercial and industrial uses) and what to consider in making the investment decision. ***We will also hear from Arden Steiner, co-founder of Rayviance. The firm has added innovations to its license for a solar hot water technology based on a pump free thermosyphon convection flow system.*** Arden has installed the system in a number of commercial and residential sites and will present them as case studies in the webinar. He will explain why Rayviance has significant operational and cost advantages over the alternatives. Scott will question Arden about the technology and its advantages.

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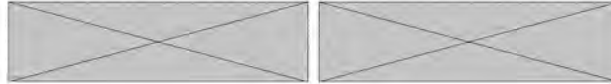
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Edward Saltzberg, Ph.D.
Managing Director
Security and Sustainability Forum



The Security and Sustainability Forum, 1006 N Tuckahoe Street, Falls Church, VA 22046

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Sent: Mon 6/12/2017 12:26:46 AM
Subject: Fwd: FreedomWorks asks for your help repealing "ObamaCare".

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From: Linda Dahl <Ex. 6 - Personal Privacy>
Date: Sat, Jun 10, 2017 at 10:29 AM
Subject: FreedomWorks asks for your help repealing "ObamaCare".
To: Linda Dahl <Ex. 6 - Personal Privacy>

Please share, healthcare needs to get fixed asap.

Blessings,
Linda

Your help is urgently needed! Senator Richard Burr is just not "walking the walk" when it comes to getting rid of Obamacare. As a matter of fact, he is not even "talking the talk"! We need to try to change that!
Senators Burr is saying that our health care travesty cannot be remedied this legislative session. Let's let him know that Republicans campaigned on getting rid of Obamacare right away and that we expect him to do just that. Please give the Senator a quick call and tell him so.



Senator Richard Burr: [\(202\)224-3154](tel:(202)224-3154)

As always, thank you for all you do. Working together, we are truly making a difference!

FreedomWorks

--

Fremont V Brown III
CEO - TarheelTeaParty.org
Local Coordinator - Tea Party Patriots
1434 Brevard Road
Asheville, NC 28806
(828) 777-5326

--

Brenda Vaughn
McDowell County Republican Secretary
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Edition 43

May 2017


The GovDataDownload May 2017 Newsletter



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[Meet the Veteran: Tom Deierlein, Technophile and Army Ranger](#)

As part of a series on members of the GovDataDownload community who have served our country, we sat down with Tom Deierlein, President and CEO of ThunderCat Technology, a NetApp partner in the delivery of data management solutions to public sector customers. Tom's life has been spent moving between military and civilian environments, and he shares how each has shaped his perspectives and the lessons he's taken away. In addition to his leadership of ThunderCat Technology, Tom also co-founded the TD Foundation which provides aid to children of wounded warriors and fallen heroes.

[Building Smart Cities and Counties Starts with a State of the Art Data Management Infrastructure](#)

"Smart Cities" has become one of the most popular buzzwords of 2017, and with good reason. Smart city initiatives were on full display at the recent Large City, Large County Fly-In event hosted in Washington D.C. and attended by chief information officers (CIOs) from the fifty largest counties and cities in the U.S. Chip George, Senior Director of State & Local Government and Education (SLED) at NetApp, attended the event and described to GovDataDownload some of the key takeaways about hybrid cloud, IOT, and other smart city trends.

The Impact of Big Data and Drones on Military and Civilian Agencies

Following his participation in a panel discussion entitled "The Unmanned Movement: Unmanned Systems in the Multi-Domain Battle" at the recent C4ISR conference, Dr. Greg Gardner, Chief Architect, Defense and Intel Solutions at NetApp, gives a short history of unmanned systems and discusses how they create opportunities as well as challenges for military and civilian agencies.

Recognizing 'The Few, The Proud' during National Military Appreciation Month

In honor of National Military Appreciation Month, we are featuring the stories of NetApp team members and partners who have served their country in the armed forces to learn how their experiences in the military have shaped their civilian careers. In this article, we talk with Bernardo Guzman, Facilities Program Manager WPR Americas Operations at NetApp, who started his career as a private in the United States Marines Corps (USMC). Bernardo reflects on why he chose to serve and his most memorable experiences in the marines.

As part of our follow up, we would like to contact you by telephone to discuss NetApp products, services and events that may be of interest to you and your organization and to solicit your feedback regarding our solutions. If you wish to receive a call from us, please [click here](#) to provide us with your contact number.

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495 E. Java Drive, Sunnyvale, CA 94089 USA

To: Reeder, John[Reeder.John@epa.gov]
From: Jonathan Copeland
Sent: Fri 6/2/2017 7:26:04 PM
Subject: FW: Risk assessment for your program

John —

Following up on my email from earlier this week — can I get you an agenda on our upcoming Government Enterprise Risk Management Summit July 25-25? We've had a lot of positive response to it, and I'd love to get you or your team members registered.

Thanks,

—Jonathan Copeland

From: Jonathan Copeland
Subject: FW: Risk assessment for your program
Date: Wednesday, May 31, 2017

John —

New mandates have been announced under OMB Circular A-123 that require every government program to conduct a formal risk assessment and submit mitigation plans to the White House budget office.

To learn how to meet these new mandates, would you like to join us on July 24-25 for the Government Enterprise Risk Management Summit (Gov-ERM)?

Gov-ERM provides comprehensive coverage of the latest mandates and best practices for conducting risk assessments, integrating performance management with risk management, mitigating risks through improved internal controls, and changing the culture of your agency to be more aware of risks.

This year Gov-ERM will spotlight strategies for three common government risk areas: Cyber Risk, Fraud and Improper Payments, and Operational Risk.

Space is limited so let me know asap if you want to see the full agenda and if you want to register yourself or a colleague!

Best,

Jonathan Copeland
Deputy Director, Outreach
Performance Institute

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Our mailing address is:

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1440 G St NW

Washington, DC - DISTRICT OF COLUMBIA 20005

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To: Reeder, John[Reeder.John@epa.gov]
From: Rob Reinalda
Sent: Mon 6/5/2017 4:39:54 PM
Subject: Add writing to your special skills

Maybe you don't consider yourself a writer.

Sure, you put together statements and memos; you send emails every day. Yet, the big writing assignments are terrifying.

That negative voice in your ear is saying:

- "You're not a grammar expert!"
- "How can you possibly fill these pages?"
- "What if it comes out wrong or, worse, looks stupid?"

Good writing isn't a genetic gift; it's a learned skill. Let Ragan Executive Editor **Rob Reinalda** help you cultivate your unique voice and cut through the clutter with powerful prose with **Ragan's Business Writing Clinic** on **July 27 in Chicago**.

In the workshop you will:

- Practice methods for unclogging your text so your message lands
- Master the essentials of grammar, syntax and punctuation and their vital role in your writing
- Participate in hands-on writing and editing assignments
- Learn tips for proofreading, including dozens of red flags to watch for

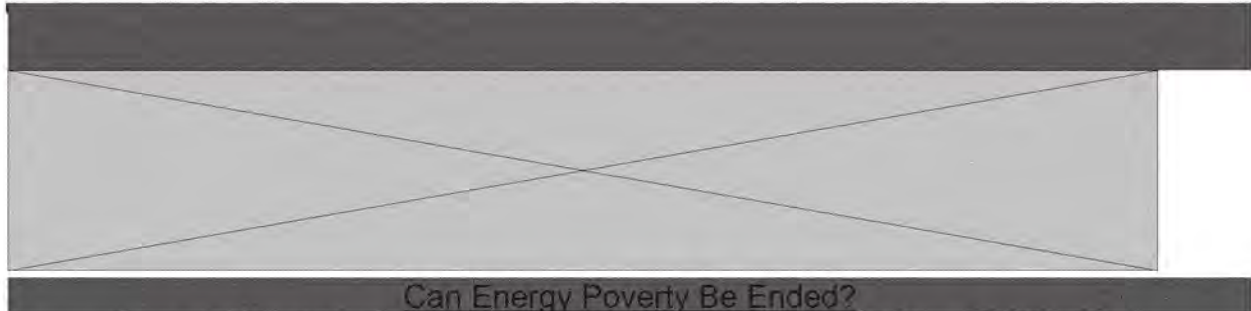
You're already a writer, whether or not you identify as one. Why not excel? Join us for this exclusive workshop, and add to your special skill set on your résumé and in your daily work.

This email was sent by: Ragan Communications
316 N. Michigan Ave., Suite 400 Chicago, IL, 60601, US, cservice@ragan.com
[Update Profile/Unsubscribe](#)
Sent to: reeder.john@epa.gov

To: Reeder, John[Reeder.John@epa.gov]
From: Security and Sustainability Forum
Sent: Fri 6/2/2017 6:58:08 PM
Subject: "How Sustainable are the Paris Climate Commitments?" - Panel set for the June 8th Webinar

Janos Pisztor, former UN Assistant General Secretary for Climate Change, joins the panel

Having trouble viewing this email? [Click here](#)



Can Energy Poverty Be Ended?
**Janos Pisztor Joins Katharine Hayhoe and Alice Hill in the
Climate Ethos Webinar**
See bios below

How Sustainable is Our Global Climate Ethos

June 8, 2017
1:15 to 2:45 PM EST



**Timely that our next webinar is about *climate action commitment* without US
Government Leadership.**



Building on decades of work across the globe by the public and private sectors, has a shared global climate ethos -- a sense of collective commitment and common purpose -- reached a tipping point?

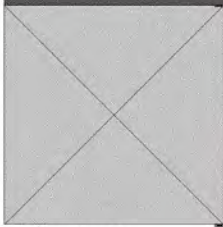
- **Are the Paris Agreement and the growing number of cities adopting carbon-based energy goals evidence of that? How durable are these actions?**
- **Is a sense of common purpose sustainable without US federal government coordination**

and leadership? What roles do sub-national and municipal governments play?

- **How can business, security, religious, and civil society actors continue and even accelerate efforts to reduce emissions? Can they work together to avoid the worst climate impacts?**
- Is the global commitment to climate solutions shallow or deep?
- **How can moral, scientific and political imperatives find common ground?**
- Does the global climate ethos include extracting, storing and reusing carbon already in the atmosphere?
- **Where do opportunities for collaborative innovation exist?**

Join Arizona State University and global governance, business, science, policy and faith leaders in a 90 minute webinar to explore the depth and breadth of a global climate ethos and the direction of plausible, innovative climate action emerging across sectors and among global societies.

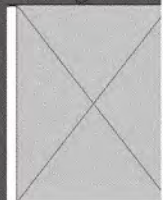
Meet the Panel



**Elisabeth
Graffy**

Elisabeth Graffy will moderate the webinar. Elisa is Professor of Practice in the School for the Future of Innovation in Society and in the Consortium for Science, Policy and Outcomes) at Arizona State University. She co-directs the Energy and Society program within ASU-LightWorks and co-leads the Environmental Humanities Initiative in the Global Institute of Sustainability (GIOS). She founded and directs the Spirituality and Sustainability Initiative and the Household Independent Power Project, as well as the Center for Energy and Society

Alice C. Hill is a Research Fellow at the Hoover Institution where her work focuses on building



Alice Hill

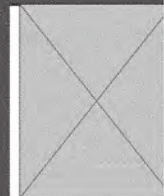
resilience to destabilizing catastrophic events, including the impacts of climate change. Prior to joining Hoover, she served as Special Assistant to the President and Senior Director for Resilience Policy for the National Security Council. While at the White House, Alice led the development of national policy regarding national security and climate change, incorporation of climate resilience considerations into international development, Federal efforts in the Arctic, building national capabilities for long-term drought resilience, and establishment of national risk management standards for three of the most damaging natural hazards.

Katharine



Hayhoe

Katharine Hayhoe is a professor in the Department of Political Science and Director of the Climate Science Center at Texas Tech University, part of the Department of Interior's South-Central Climate Science Center and founder and CEO of [ATMOS Research](#). Katharine's research focuses on establishing a scientific basis for assessing the regional to local-scale impacts of climate change on human systems and the natural environment.



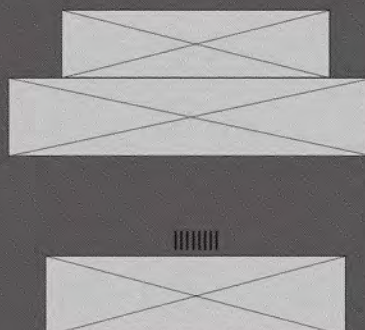
**Janos
Pistor**

New SSF Series on Green Technology

Janos Pistor is Carnegie Council senior fellow and executive director of the Carnegie Climate Geoengineering Governance Initiative (C2G2). He has over 35 years of work experience in the areas of energy, environment, climate change, and sustainable development. Before taking up his current assignment he was UN assistant secretary-general (SG) for climate change in New York under Secretary-General Ban Ki-moon. Earlier, he was acting executive director for conservation (2014) and policy and science director (2012-2014) at WWF International. He directed the UNSG's Climate Change Support Team (2008-2010) and later was executive secretary of the UNSG's High-level Panel on Global Sustainability (2010-2012), among many other leadership roles.

This webinar seeks to inspire local conversations and ideas to advance cross-sectoral collaborations.

We'll also share resources to support a climate ethos dialogue in your community.



[Click to sign up for SSF email alerts if a colleague sent you this email and you are not already on our mailing list.](#)

Solar Hot Water Systems - What you Need to Know
Residential/Commercial/Industrial Uses

June 28, 2017

1:15 to 2:15 PM EDT



This is the first is a new SSF series on technology called
- *Going Green Without Going Into the Red* -

Solar energy can be used in several ways to heat water for domestic, commercial and industrial uses. Examples include photo voltaic cells to generate electricity for hot water heaters and both passive and active thermal solar systems for direct heat. ***With the cost of solar equipment dropping, there are significant savings in solar hot water, but what are the considerations in determining which technology is best for your situation?***

In this 60-minute webinar, renewable energy expert **Scott Sklar** will review the pros and cons of investing in a solar hot water system (residential, commercial and industrial uses) and what to consider in making the investment decision. ***We will also hear from Arden Steiner, co-founder of Rayviance. The firm has added innovations to its license for a solar hot water technology based on a pump free thermosyphon convection flow system.*** Arden has installed the system in a number of commercial and residential sites and will present them as case studies in the webinar. He will explain why Rayviance has significant operational and cost advantages over the alternatives. Scott will question Arden about the technology and its advantages.

Thinking of Unsubscribing?

• Not Interested in These Topics?

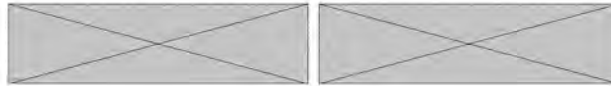
SSF convenes global experts in free educational webinars about critical climate risk topics such as urban resilience, the food - water - energy nexus, droughts and flooding, green infrastructure, public health, renewable energy, and global climate security, among others. **Don't unsubscribe if you are interested in some of these topics and you will continue to receive webinar alerts.**

Access the arsenal of free climate education webinar recordings in the SSF archives.

<http://securityandsustainabilityforum.org/archives/webinars>



Edward Saltzberg, Ph.D.
Managing Director
Security and Sustainability Forum



The Security and Sustainability Forum, 1006 N Tuckahoe Street, Falls Church, VA 22046

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To: Reeder, John[Reeder.John@epa.gov]
From: Records Management Workshop with NARA Keynote
Sent: Mon 6/5/2017 4:07:51 PM
Subject: [SPAM] June 20th - Gov Records & eMail Management - Going Forward to Meet Requirements

Records Management in Government Training Workshop XIV

*Agency Self Assessments are in to NARA
- How Can You Improve Your Scores?*

Managing Government Records Directive Updates:

**What Agencies Need to Do for 2017 and Beyond
Lessons Learned and Best Practices**

**June 20, 2017
Willard InterContinental Hotel
Washington, D.C.**

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The Leader in Government Training Since 1982

Keynote Speakers:

**Don Rosen
Director of Records Management Oversight and Reporting
National Archives and Records Administration (NARA)
and**

Arian Ravanbakhsh
Manager, Policy and Program Support Team
National Archives and Records Administration (NARA)

Additional Government Speakers
Matthew Olsen
Acting Chief Privacy and Data Sharing Officer
Acting Executive Director
Office of Privacy & Information Management (PIM)
U.S. Department of Health and Human Services

Mark Patrick
Chief, Information Management Division
The Joint Staff Secretariat
Department of Defense

Additional Government Speakers to be Announced Soon

David Ferriero, the Archivist of the United States, said:

Working together, NARA and all agencies continue to make progress on the key goals and requirements in the Directive. For us to succeed as a records management community, the SAORMs in each agency must drive the change that needs to happen if we are to realize the vision of a digital Government. Based on the data summarized in this report, we are making progress, but there is still much work to do .

The analysis shows that SAORMs (Senior Agency Officials for Records Management) reported they:

- ***Will meet the email target by the end of this year (92%).***
- ***Will meet the target to manage permanent electronic records in an electronic format by the end of 2019 (92%).***
- ***Are taking actions to ensure records in non-official messaging accounts are captured in an official account within 20 days (83%).***
- ***Will submit schedules for all existing paper and other non-electronic records by the end of 2016 (91%).***
- ***Are preparing for the upcoming change in Presidential administration (79%).***

This workshop will examine the SAORM's report to determine what steps are required to fill the gaps

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Metro Maryland Chapter
www.arma-metromd.org

Government and Industry Partners are Invited to Register

Goals of this workshop are:

- **Focus on email retention regulation and policy and email best practices**
- **Provide attendees with a clear idea of the changes envisioned in the Directive,**
- **Strategies to obtain funding for solutions**
- **Help understand the role of the Senior Agency Official (SAO) in setting agency priorities and achieving program success**
- **Describe the developing roadmap that will lead to realizing these changes, and**
- **Describe the steps individual records managers can do now to align their work with the records management future the Directive envisions.**

- **Specific Agency Actions to be Completed by December 2015 and the out years**
- **Establishing a community of interest for Records Management**
- **Current email policy and regulations**
- **Tips for planning for the Directive's 2019 Deadline**

Overview:

With the recent headlines regarding government email retention and e-discovery, it is important to understand how the NARA/OMB regulations and deadlines will impact your agency. This one-day Potomac Forum Workshop will focus on the activities mandated by the NARA/OMB Records Management Directive. Key executives from NARA and government agencies will discuss the directive and its implementation. Detailed review and analysis of the directive will be presented to help agencies better understand what they need to do, how to do it, and how to get the funding necessary to be successful. The recent Agency Submissions to NARA are discussed along with scores and suggestions for improving Agency Scores.

What You Will Learn:

- What happens now that the 2016 deadline has passed
- What needs to be done to comply with the provisions of OMB M-12-18
- How the relationship between NARA and Federal agencies have and will change
- How the role of technology will evolve in the achievement of OMB M-12-18's goals
- What this initiative will mean for Federal records management in the short and long term
- What the components of a sustainable Records Management program will be in this new environment
- A better idea of the commitment of time and resources needed to comply with the Directive
- How the Senior Agency Officials can and are making a difference in improving the management of government records
- NARA Requirements for managing email - lessons learned from recent IRS news event - Complying with the Law - the Federal Records Act and what it means for email and other records losses
- The November 2014 Records Management Legislation and what it means to Agencies and Records Managers
- and more...

Why You Should Attend:

- To gain a clear understanding of OMB M-12-18
- To assist you in getting the best start on the many changes OMB M-12-18 will bring to your agency
- To learn key funding strategies to help your agency implement solutions to meet its objectives
- Hear from other government officials about the practical aspects of complying with the Directive
- Ensure success of your Records Management Program as you implement the Directive
- Lessons Learned since the publication of the Directive
- Understand the NARA requirements for email management - avoiding embarrassing non-conformance
- Understand email retention regulation, policy, and legislation.

Who Should Attend:

- CIO's and the Staff including technical staff involved with Records Management
- Senior Agency Officials (SAO's) charged with responsibility for the implementation of solutions for their agency
- IGs and Staff
- Government Records Managers
- All those with responsibility for initiating and carrying out the reforms mentioned in the President's Records Management Directive
- Professionals responsible for managing information resources on an enterprise-wide basis
- Those needing to understand latest NARA policy and guidance
- Contracting, Procurement and Acquisition Management Professionals
- Program Managers Who Must Understand Records Management in Government
- Government executives who want to understand email retention and records management regulation, policy, and legislation.
- Industry Partners

Format:

This workshop will combine keynote presentations by NARA, lectures on implementing the Directive, real world examples and discussions to provide a thorough, enjoyable day of learning.

Workshops are NOT Sponsored by Advertisers or Paid Sponsors

Workshops Present What You Need to Perform Your Job
- NOT What Sponsors or Advertisers Want You to Hear

"Early Bird" Reduced Registration Until June 10th
also
"Send a Team" Rates

The Previous Thirteen Potomac Forum Records Management Workshops
on Email, Records Management and the OMB/NARA Directive were
Rated as "Excellent" by Workshop Attendees
CEU Credits Awarded

Representative Student Testimonials from Previous Potomac
Forum *Managing Government Records Directive from OMB and NARA*
Workshops

*It was informative and what I have learned can be
taken back and applied to my office.*
Records Management Specialist
Civilian Department

*Excellent - I got a number of good ideas and suggestions.
Well worth the investment.*
Regulation Council
Civilian Administration

One of the best trainings I have been to.
Records Manager
Navy Center

Very well done
Deputy Commissioner for Legislative and Congressional Affairs
Civilian Agency

*The overall workshop was great. I learned a lot of valuable information on to help me
in my current position and provide additional guidance for my organization*
Records Management Officer and Team Lead
DOT Agency

... for anyone who needs to follow the directive for records management
Admin Specialist
Civilian Commission

Outstanding!

Management and Program Analyst
DOT Agency

Very Well organized. Job well done!
DoD IG Specialist

Great!
Assistant Records Manager
Small Agency Commission

Workshop for Government and Industry Partners

"Early Bird" Reduced Registration Until June 10th

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Reduced Registration Rate for Teams

Registration and Information:

www.potomacforum.org

Call: (703) 683-1613
info@PotomacForum.org

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400 North Washington Street , Alexandria , Virginia, 22314 , USA

To: Reeder, John[Reeder.John@epa.gov]
From: Granicus
Sent: Thur 6/15/2017 5:19:37 PM
Subject: Digital Strategy Awards Nominations Now Open



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2017 Granicus Digital Strategy Awards

**You are responsible for important work that affects citizens' lives.
And you gladly do it, sometimes without much recognition or
praise.**

**But now is the time to shine a light on the inspiring work you and
your team do every day!**

**Submit a nomination for the 2017 Granicus Digital Strategy Awards in one
(or more!) of the following categories:**

- Digital Achievement Award
- Communicator of the Year
- Modern Government Leadership Award
- Creative Use of Digital Citizen Engagement
- Environmental Stewardship Award
- Transformed Access to Services
- Enhanced Public Awareness

**For more details on the nomination and judging process, visit
<https://granicus.com/awards>. We look forward to receiving your
nominations by July 31.**

Granicus
408 St. Peter Street, Suite 600, St. Paul, MN 55102 | [Legal & Privacy](#)
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To: Reeder, John[Reeder.John@epa.gov]
From: John Wilson
Sent: Thur 6/1/2017 8:52:15 PM
Subject: FW: Your RSVP for June 6

John —

Did you want me to get you signed up for the June 6 Federal Summit on Data Analytics?

There are still a few slots left, and I wanted to make sure you had the opportunity. Remember, this event at the Reagan Building in DC is completely free to attend.

Can I get you signed up? [Here's the link to RSVP](#)

Thanks,

—John Wilson

From: John Wilson
Subject: Your RSVP for June 6
Date: Wednesday, May 24, 2017

John —

I'm reviewing the list of attendees for the Federal Summit on Data Analytics being held June 6 at the Reagan Building and do not yet see signed up.

The event is sponsored by Qlik so it is completely free to you and will present all the latest initiatives, mandates, and best practices in performance management and data analytics in government.

We want to make sure we have enough seats for attendees, so can you advise whether you will be attending? [Here's the link to RSVP](#)

Thanks!

John Wilson
Outreach Coordinator
Qlik Federal Summit

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To: Reeder, John[Reeder.John@epa.gov]
From: Via Satellite
Sent: Tue 6/13/2017 1:20:20 PM
Subject: Last chance to win a \$100 Amazon Giftcard

Dear John,

For nearly 30 years, **Via Satellite** has provided essential news and expert business analysis on the global commercial communications satellite industry, including current and evolving applications, infrastructure issues, technology, and business and regulatory developments around the world. Top satellite executives from 160 countries read Via Satellite to fully understand the industry and maximize their company's profits.

Help us ensure we are providing you the content you need to succeed.

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PLEASE TAKE OUR SHORT SURVEY

We know your time is valuable!

Take the Survey, and you will automatically be entered for a chance at a \$100 Amazon Giftcard!

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Via Satellite
Marketing Manager, *Aerospace*

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To: Reeder, John[Reeder.John@epa.gov]
From: IDG Connect
Sent: Sat 6/10/2017 1:28:38 PM
Subject: Top Database Security Products, InfoSec Europe Takeaways, & Graphs of the Future



[InfoSecurity Europe 2017: Computer security has become everything security](#)

[Interview: Paresh Davdra on fintech, blockchain and the future of banks](#)

[Review: Discover what real users think of database security products](#)

[Innovation 2.0: What you need to know about graph-based machine learning](#)

Apple held its annual WWDC event this week. Announcements were mostly about incremental improvements - including new versions of MacOS, iOS, WatchOs, TVOS - and the usual updates to hardware. There was a big redesign for the App Store, and this version of MacOS - High Sierra, comes with virtual reality capabilities.

The unsurprising surprise reveal was the Siri-enabled smart speaker, the HomePod. Tim Cook & co. seem to be pitching the device around music initially, rather than an AI assistant or home controller. It looks quite nice though.

Read the rest of this week's tech news roundup [here](#).

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A look at what's happening in tech around the world

[Africa: Seven things to know about datacentre deployment in Africa](#)

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Other Regulars:

[Typical 24: Jon Topper, The Scale Factory](#)
[C-Suite Career Advice: James Foley, Resilient Plc](#)
[CMO Files: Richard Brandon, Edgware](#)
[C-Suite Talk Fav Tech: Magnus Jern, DMI](#)

[InfoShot: Tech internship pay](#)
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[IDG Research: Networking more linked to security than ever before](#)

P.S. Test your knowledge! Check out our new [IDG Connect weekly quiz](#)

Kind Regards,
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To: Reeder, John[Reeder.John@epa.gov]
From: Korn Ferry PROFILOR
Sent: Sat 6/10/2017 9:21:55 AM
Subject: SURVEY DUE DATE PASSED REMINDER: Feedback for George Hull

Your recommended survey due date has passed. If you take action now your feedback can be included in the participant's report.

If you experience any difficulty getting to the Internet, please contact your internal help desk. For any other technical problems, please send an e-mail to KornFerry_support@datasltn.com.

To complete and submit your confidential survey, please go to this web site:

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User ID: Ex. 6 - Personal Privacy

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--- Sent To reeder.john@epa.gov ---

To: Reeder, John[Reeder.John@epa.gov]
From: Afzal Bari
Sent: Tue 6/13/2017 11:06:55 AM
Subject: Does Washington Trust Social Media? Share Your Opinion

Colleagues,

Last spring, **1 in 4 DC Insiders cited social media as a trusted source for Washington news and information**, up from 1 in 10 the year before. Will the upward trend continue? Or are we becoming more skeptical of social content?

These are questions many are asking, and National Journal Research is partnering with policy professionals across city to develop the answers. Please accept this invitation to contribute your views in the 2017 **Washington in the Information Age** survey.

[Participate Here.](#)

We hope you'll take **15 minutes** to help deepen our collective understanding of how the evolving media landscape shapes policy decision-making. Responses are kept **strictly confidential** and only presented in the aggregate.

We greatly appreciate your time, and in exchange for your participation in this research, we will provide you with priority access to the study's executive summary.

Thank you for all that you do,
Afzal Bari
Executive Director, Product & Marketing Strategy
National Journal

If you have trouble accessing the survey above, please use the link below.

https://njresearch.co1.qualtrics.com/jfe/form/SV_7VRHmJBmfwYtV0p?Q_DL=ag7r0Dm2CnCLiVT_7VRHmJBmfwYtV0p_MLRP_5nz1eB

PRIVACY AND CONFIDENTIALITY: This study is conducted by National Journal Research. National Journal maintains a strict firewall between its research and newsroom; journalists do not have access to these data. If you participate, your identity and responses will remain confidential.

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To: Reeder, John[Reeder.John@epa.gov]
From: i360Gov Webinars
Sent: Thur 6/15/2017 2:15:37 PM
Subject: Government Endpoint Security: Current Initiatives and Best Practice Tips

[here](#)

Government Endpoint Security: Current Initiatives and Best Practice Tips

Wednesday, July 26th, 2017 at 2:00pm ET

Governments are among the most highly targeted networks in the world. From political campaigns to government personnel to intelligence and troop planning, government data is of great interest to nation-states and others for a variety of reasons. Accessing sensitive government data means accessing the assets that can connect to it or house that data. Servers, workstations, virtual desktops and other devices can all suffer from vulnerable operating systems and applications – a way in for a would-be attacker. New exploits to take advantage of a vulnerability and new malware appear daily, and slow government patch cycles make this even more concerning.

Attend this 1-hour complimentary i360Gov educational webinar for a comprehensive overview of the latest Endpoint Security techniques, including case studies from federal and state/local government subject matter experts that will provide best practice tips and advice regarding:

- How to protect government systems (e.g., servers, workstations, virtual desktops) from exploits for zero-day vulnerabilities, APTs, and never-before-seen malware.
- How to use endpoint security as a compensating solution to patch management.
- How to protect key ICS/SCADA systems from attacks. (i.e. highly sensitive SCADA controls in military and energy operations)
- How to control executable use from mobile media (e.g. USB, CD-ROM drives) where such media is not controlled in government installations.
- How to ensure compliance to specific government mandates.
- How to leverage Endpoint threat prevention as part of modernized defense in depth.

Date and Time

Wednesday
July 26th, 2017
2:00pm ET

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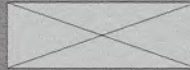


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Date and Time

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July 26th, 2017
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From: Granicus Webinars
Sent: Thur 6/1/2017 5:08:40 PM
Subject: [Webinar] Drive revenue for your agency

FREE WEBINAR

DMV Spotlight: Secrets to Saving Millions and Driving Revenue

JUNE 21 | 2PM ET

REGISTER
NOW

DMVs are Transforming with Digital Communications

But they aren't the only agencies that spend millions of dollars every year sending snail mail notices of license registrations and renewals. There is a better way to notify citizens and drive them to action — digital communication.

Register for this free webinar on June 21 at 2PM ET / 11AM PT to learn how DMVs are saving money, improving the citizen experience and generating income with email and text message notifications — and how you can replicate their success.

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IN THIS WEBINAR, YOU'LL LEARN:

How digital
communications are
transforming DMVs

Best practices for
connecting with hard-to-
reach audiences

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messaging/SMS
technology

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To: Reeder, John[Reeder.John@epa.gov]
From: CyberSecurity Executive Order
Sent: Thur 6/1/2017 5:08:28 PM
Subject: [SPAM] Register: Implementing the President's Cybersecurity Exec Order (EO) Training Workshop

**Please Review and Forward to
Your Government Executives, Managers and Staff
Who Play a Part in Agency Cyber Security Management or Implementation**

Potomac Forum Training Workshop

**Implementing the President's
Cybersecurity Executive Order (EO)
Training Workshop**

*A "How To" Workshop to Implement the
Requirements of the EO and its Reporting Requirements*

Date: Wednesday, July 12, 2017

Early Bird Reduced Registration Fee Until June 17th

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Location of Workshop:

**Willard InterContinental Hotel
Washington, D.C.**

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and NOT Sales or Marketing Events**

**Workshop for Government & Industry Partners
Press is Not Permitted to Encourage
Candid Discussion in our Learning Environment**

Keynote:
Dr. Ron Ross
NIST Fellow
Author of the NIST Risk Management Framework (RMF) and
Numerous NIST Cyber Security Publications

Government Speakers are being approved for participation by their Agencies.

Potomac Forum Workshops are 100% educational programs and not sales or marketing events!

Overview:

This workshop will focus on the President's EO on Cybersecurity and discuss its requirements. A key requirement is the implementation of NIST's Cybersecurity Framework (CSF). We will present an understanding of the CSF and NIST's Risk Management Framework (RMF) which is a key component of the CSF. The CSF and RMF are critical for the federal government in its efforts to mitigate risk within enterprise information systems. The workshop will provide detailed guidance on the integration of the CSF and RMF into a holistic Cybersecurity solution. In addition, the workshop will address the EO reporting requirements for the first 90-day report and the other reports identified in the EO.

Hear from industry experts and government officials tasked with implementing robust cybersecurity and risk management strategies along with learning how NIST's CSF and RMF can be effectively implemented to reduce the risk of cyber-attacks. Listen to a government panel of CIOs and CISOs to understand the challenges they are facing on a day-to-day basis and how implementation of NIST's CSF and RMF helps them identify the risks and what it takes to mitigate those risks. Gaining insights from the panel and peer interactions at the workshop should be invaluable in implementing the President's EO and moving the needle forward in improving federal cybersecurity.

What You Will Learn:

- **The approach used by the NIST RMF**
- **The value of the integration of the NIST RMF with the NIST**

CSF

- **Development of agency Risk Management Strategies**
- **Changes in federal information system authorization requirements and guidelines**
- **Guidance into what agencies can expect from the NIST RMF and new CSF processes**
- **Importance of Risk Assessments (RA), Security Control Assessments (SCA), and Security Testing & Evaluation (ST&E)**
- **Security control categorization and how it is used to manage risk**
- **NIST SP 800-53A, Guide for Assessing the Security Controls in Federal Information Systems and Organizations: Building Effective Security Assessment Plans; NIST SP 800-37 Rev. 1 Guide for Applying the Risk Management Framework to Federal Information Systems: A Security Life Cycle Approach and NIST SP 800-39 Managing Information Security Risk**
- **Reporting Requirements for the Executive Order**
- **Best Practices for Responding to the Executive Order**

Why You Should Attend

- **Review the key steps within the NIST RMF and CSF**
- **Obtain practical knowledge of how NIST RMF and CSF are incorporated into information system security**
- **Gain insight into conducting and implementing NIST RMF and CSF in your organization**
- **Collect information on how NIST frameworks can be leveraged to enhance the security of your organization**
- **Learn how risk management and cybersecurity are essential for regulatory compliance**
- **Learn from risk management, security and OIG colleagues in Federal, State and Local Governments**
- **Learn how other Agencies are responding to the EO**

Who Should Attend:

- **CIOs, CISOs and Staff**
- **IT security and risk management practitioners**
- **IGs and Staff**
- **Program Managers responsible for risk management**
- **Government Employees who want to better understand organization risk management**

- Executives who oversee risk management for the government
- All government executives, managers and staff who need to better understand risk management and implementing the President's Executive Order

CEUs Awarded Upon Workshop Completion

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1. Managing Government Records (RM) Training Workshop XIV
Agency Self Assessments are in to NARA
-- How Can You Improve Your Scores?
Tuesday, June 20, 2017

2. How to Meet the Workforce Requirements of the President's
Executive Order 13781 Training Workshop
What Federal Executives, Managers, and Supervisors Need to Know to
Support the Goals of the Executive Order for Reforming the Federal
Government and Reducing the Federal Civilian Workforce
Wednesday, June 28, 2017

3. Implementing the President's Cybersecurity Executive Order (EO)
Training Workshop
A "How To" Workshop to Implement the Requirements
of the EO and its Reporting Requirements
Wednesday, July 12, 2017

**All Workshops at the
Willard InterContinental Hotel
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To: Reeder, John[Reeder.John@epa.gov]
From: DC5G Summit
Sent: Fri 6/9/2017 3:42:12 PM
Subject: [SPAM] Have you seen the news?

Faster speeds, increased bandwidth, smarter devices, shared spectrum, updated ground systems, regulations – 5G brings a host of opportunities...and many challenges. With a national rollout expected in 2020, and some markets rolling out earlier once standards and hardware are ready, telecommunications and satellite service providers, handheld device manufacturers and others are striving to understand ways to capitalize on 5G, and what barriers exist on the path to the next generation of mobility.

What's being reported in the news?

[Ericsson Exec Examines 5G Timeline and Needs for Bandwidth – Via Satellite](#)

[5G: The Era of Convergence – Via Satellite](#)

[Verizon Snags Straight Path Spectrum - Cablefax](#)

[Sprint commits to 5G services, devices by late 2019 – CNET](#)

[T-Mobile's 2020 Plan Piles Pressure on Europe's 5G Players – Light Reading](#)

What will be covered at the DC5G Summit?

Attendees at the [DC5G Summit](#) will experience a program comprised of keynote presentations and panel sessions that will delve into:

- How Government Plays a Critical Role in Supporting and Developing America's 5G Economy
- The Big Bang: Coverage & Connectivity Strategies & Visions for 5G Rollout
- Evolution of Applications, Ecosystem, Vertical Markets and Big Data Analysis in the 5G World: From Enhanced Mobile Broadband to Virtual Reality
- How Standards and Sound Spectrum Policy will Shape the Future 5G-Connected Worldwide Economy
- 5G's Biggest Challenges: Security, Privacy, Bandwidth and Regulatory Barriers
- 5G for Industry: Software Defined Networks, Automation, and Computing at the Edge

The entire [#DC5G](#) audience will have plenty of [networking opportunities](#) including a Power Lunch to get the innovative juices flowing, and a closing reception to encourage collaboration in a relaxed, more casual atmosphere.

Not ready to register? Join our mailing list to continue to receive updates on the DC5G Summit!

www.DC5GSummit.com

Michael Cassinelli

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To: Reeder, John[Reeder.John@epa.gov]
From: IDG Connect
Sent: Thur 6/1/2017 3:05:45 PM
Subject: 4 Common IT Challenges (and How to Overcome Them)



4 Common IT Challenges (and How to Overcome Them)

Technology is driving innovation in business today. As a result, businesses and their customers rely more and more on technology to do their jobs - IT is at the center of this movement and must meet demand while addressing customer and employee challenges.

IT service management (ITSM) systems support IT departments in their effort to keep up and move the company forward. ITSM can make the job easier, and free up resources to innovate.

Follow this [guide](#) to learn about challenges in today's technology-driven marketplace, and how to find solutions with cloud-based Remedyforce for ITSM. Then, hear how three Remedyforce customers specifically benefited from ITSM.

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All the best!
IDG Connect



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From: Federal Times
Sent: Thur 6/1/2017 10:30:30 AM
Subject: Veterans Affairs kills RFP 5 days later

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Jun 01,
2017

Jun 01, 2017

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Daily Brief

VA kills RFP for 2 digital centers days after it was introduced

The agency sent out bids for two data centers to manage benefits programs, but rescinded them after a change in priorities.

[Read Story](#)

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Hiring, legacy IT challenges hampering modernization, says survey

A survey of global public service agency technology professionals by services company Accenture found a large percentage wanting to embrace intelligent technologies to improve the efficiency and satisfaction of employees.

Contractor settles \$95M bill for overcharging government for food

A Kuwaiti contractor has agreed to settle civil fraud claims that it overcharged the federal government to feed its troops.

White House communications director resigns amid tensions

A top White House communications staffer has resigned as President Donald Trump considers a major staff overhaul.

Advertisement

GAO says feds' salaries should be based on performance, not seniority

Speaking to the House of Representatives Committee on Oversight and Government Reform, the GAO's director of strategic issues highlighted present and future federal compensation system themes and tools.

Secret Service officer caught in online pedophile sting gets 20 years, lifetime supervision

A former Secret Service officer, arrested in 2015, pleaded guilty to enticement of a minor to engage in sexual activity and attempting to transfer obscene materials to a minor and has been sentenced to 20 years in prison, followed by a lifetime of supervised release.

GAO says DHS still facing FITARA implementation challenges

A review of select Department of Homeland Security action plans to implement the CIO authority and accountability guidance of the Federal Information Technology Acquisition Reform Act found a few select aspects lagging behind.

Man gets 4 years for falsifying military record to receive benefits

A Wisconsin man made false claims about being a wounded veteran in order to defraud the government of thousands of dollars.

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To: Reeder, John[Reeder.John@epa.gov]
From: Glean.info
Sent: Fri 6/9/2017 12:16:01 AM
Subject: The Ultimate Guide to Media Measurement



The Ultimate Guide to Media Measurement

A PR & Marketing Handbook



The new ebook
Ultimate Guide to
Media
Measurement
delivers invaluable
insights from
leading experts on
strategies and
techniques to

prove and improve success of PR and marketing communications programs. The 61-page handbook also examines how PR and marketing can more effectively implement social media analytics to gain greater influence within the organization.

The free handbook covers:

- **Advice on conducting cost-effective social media monitoring & measurement.**
- **How to measure the value of press releases, trade shows**

- and video marketing.**
- **Articles on picking the best metrics for your PR and marketing campaigns.**
 - **Insights into media intelligence techniques.**
 - **Tips on avoiding the most common social media measurement errors.**
 - **Advice on selecting the best media monitoring and measurement firm for your needs.**



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From: Glean.info
Sent: Fri 6/9/2017 12:16:02 AM
Subject: Ebook: The Ultimate Guide to Media Measurement



The Ultimate Guide to Media Measurement

A PR & Marketing Handbook



The new ebook
**Ultimate Guide to
Media
Measurement**
**delivers invaluable
insights from
leading experts on
strategies and
techniques to**

prove and improve success of PR and marketing communications programs. The 61-page handbook also examines how PR and marketing can more effectively implement social media analytics to gain greater influence within the organization.

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Sent: Thur 6/8/2017 10:04:53 PM
Subject: Win a \$100 Amazon Giftcard

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Megan Pingatore
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From: Granicus Webinars
Sent: Wed 6/7/2017 5:09:26 PM
Subject: A Win-Win for DMVs

FREE WEBINAR

DMV Spotlight: Secrets to Saving Millions and Driving Revenue

JUNE 21 | 2PM ET

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DMVs and Citizens Win with Digital Notifications

Almost every state DMV sends registration and license renewal notices. Most are still sending these notices through the mail – which is costly, and makes it difficult to track engagement.

Register for this free webinar on June 21 at 2PM ET / 11AM PT to learn how SMS text messages and email are helping DMVs save more than \$1M in mailing costs annually and increase on-time renewal rates.

REGISTER NOW

IN THIS WEBINAR, YOU'LL LEARN HOW DMVs ARE:

Adopting digital
communications to realize
greater ROI for renewal
notices.

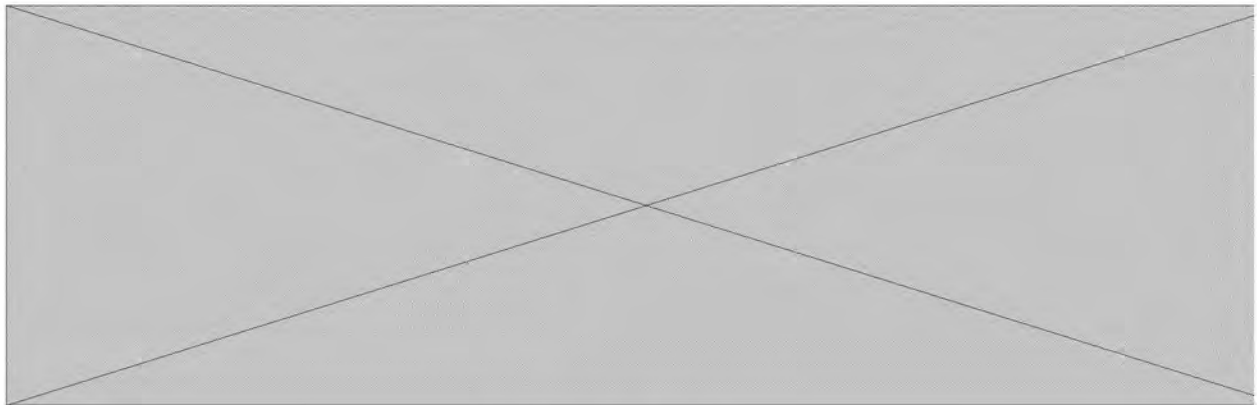
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From: SAP
Sent: Wed 6/7/2017 4:19:32 PM
Subject: SAP TechEd Las Vegas: Registration Is Open




SAP TechEd Las Vegas
September 25–29

Join technology experts from SAP and the SAP community to unlock the secrets to simple and intelligent digital transformation.

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To: Reeder, John[Reeder.John@epa.gov]
From: IDG Connect
Sent: Wed 6/7/2017 3:50:42 PM
Subject: The digital customer: The center of your universe



The digital customer: The center of your universe

Your customers expect an Amazon-caliber digital experience – ease at every touch, click, and swipe.

But how do you know if you're meeting the needs of your customers, or if your customer experience initiatives are successful? Only about 5% of apps get monitored; how can you know what you're delivering?

Check out this [on-demand webinar](#) to learn how to make digital customer experience the focus of your universe, and how IT can effectively lead these initiatives and track success.

We cover:

- The expectations of mobile and millennial customers
- How the technology landscape will evolve to address these expectations
- Success factors for digital transformation
- Where digital experience monitoring fits into the transformation puzzle

Empower your IT teams to deliver an exceptional digital experience for your customers AND to have a positive impact on business outcomes.



All the best!
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To: Reeder, John[Reeder.John@epa.gov]
From: Austin Fageol
Sent: Tue 6/6/2017 5:46:28 PM
Subject: Summer budget review

John—

The FY 19 budget reviews are emphasizing the use of performance measures and data analytics to justify all requests. To prepare your program for these mandates the Performance Institute is hosting three forums in the coming weeks that you can attend in person OR remotely by webinar:

Data Analytics for Government (June 20-21)
Performance Budgeting (June 22-23)
Using Benchmarks in Government (June 26-27)

We have recently received sponsorship for these programs so we can offer several discount passes. Attendees may be able to receive CPE and PDU credits.

Would you be interested in seeing the full agendas and attending?

-Austin

Austin Fageol
Director, Outreach
[The Performance Institute](#)

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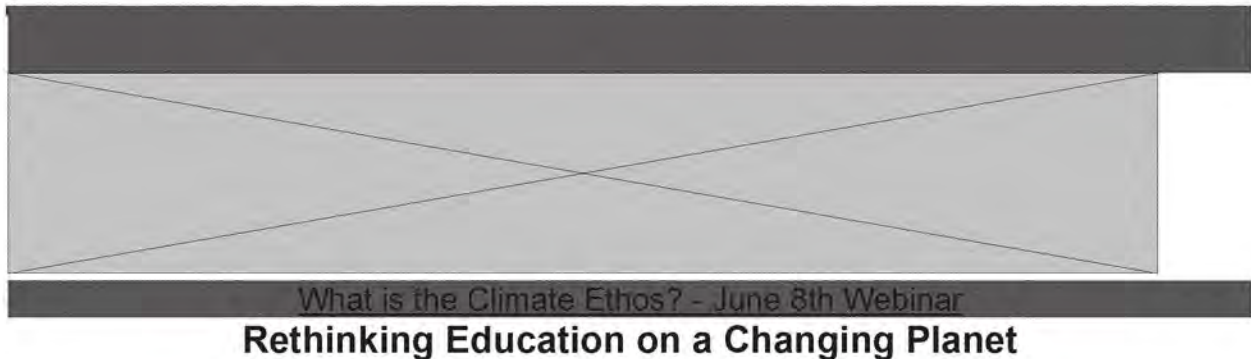
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To: Reeder, John[Reeder.John@epa.gov]
From: Security and Sustainability Forum
Sent: Thur 6/1/2017 10:19:49 AM
Subject: World Watch Institute and Filling the Climate Literacy Gap: June 1, 2017 Webinar - 1:15 PM EDT

Discount Code for World Watch Institute EarthEd Publication

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**Save 20%
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4SOTW**

Timely that the [World Watch Institute's](#) 2017 annual report, published by [Island Press](#), is about climate education, which is the topic of SSF's June 1st webinar. Systems thinking is the focus of the WWI report and the central theme of our webinar. ([Save 20% on EarthEd WITH CODE - 4SOTW](#))

Register for today's webinar because

Incorporating systems thinking into the public and private educational systems should result in graduates better prepared to understand and make or contribute to better climate decisions and policies. **Register here for:**

Teaching Systems Thinking to Fill the Climate Literacy Gap

June 1, 2017
1:15 to 2:45 PM EST
Meet the Panel



In this 90 minute webinar join [SSF](#) and leaders from education, business and philanthropy as they discuss:

1. The validity of the climate literacy gap and its impact on the workforce
2. Existing and emerging ways to teach systems thinking about climate disruptions, mitigation, adaptation and risk management
3. Concepts for developing the national/international capacity to support climate literacy
4. The role of philanthropy in accelerating deployment
5. How community colleges can be at the center of better preparing the workforce for climate risk decisions.



Monica

Brett

Monica Brett, an international climate advisor and **Senior Associate of the Security and Sustainability Forum**, will moderate the session. She is a vocal advocate for using systems thinking to teach climate and energy literacy as the best way to show the connections between the three pillars of sustainable development and the consequences of action and/or inaction. She has applied this concept both internationally and in the field via curriculum design, educational programs and public outreach campaigns.



**Bernie
Kotlier**

Bernie Kotlier directs the development, promotion, and delivery of sustainable energy training for the International **Brotherhood of Electrical Workers (IBEW)** electricians, and business development programs for the **National Electrical Contractor Association (NECA)** electrical contractors in California and Nevada including energy auditing, energy efficiency, photovoltaics, zero net energy buildings, electric vehicles, energy storage, and micro-grids. He has been a member of the California Public Utilities

Commission Advisory Committee on Energy Efficiency Workforce Development and the State of California Schools of the Future Initiative Advisory Committee. He now serves as co-chair of the California Advanced Lighting Controls Training Program and national co-chair of the Electric Vehicle Infrastructure Training Program.



**Christopher
Boone**

Christopher Boone is *Dean of the School of Sustainability, Arizona State University*. His research contributes to ongoing debates in sustainable urbanization, environmental justice, vulnerability, and global environmental change. He sits on the scientific steering committee for the Urbanization and Global Environmental Change project and is an active contributor to Future Earth, an international initiative that aims to integrate the global environmental change community with a focus on sustainable outcomes.



**Chip
Comins**

Chip Comins is *Chairman & CEO of the American Renewable Energy Institute*, President of American Spirit Productions and Founder of American Renewable Energy Day (AREDAY). As a strong advocate for employing renewable energy to mitigate climate change, he uses his documentaries, institute and global summit to both educate and provide platforms for solutions. Currently, his American Climate and Energy Literacy Initiative connects industry and community colleges to create jobs in clean technology sectors.



**Leslie
Mintz
Tamminer**

Leslie Mintz Tamminen is a *Director of Seventh Generation Advisors*. She worked to pass and implement California's Education and the Environment Initiative, a state requirement for environmental education principles and curricula development in all core disciplines in public schools for K-12. Leslie is currently appointed to the California Superintendent of Public Instruction Environmental Literacy Steering Committee and tasked with implementing the 2015 Blueprint for California Environmental Literacy.



Jeanette Murry

Jeanette Murry is *Senior Knowledge & Learning Coordinator, Climate Change Strategy and Operations, at the World Bank*. She has implemented knowledge management efforts and planning in international development, university, private sector and NGO contexts. She has extensive experience in learning design, development, delivery, and monitoring and evaluation with a focus on climate change.



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SSF convenes global experts in free educational webinars about critical climate risk topics such as urban resilience, the food - water - energy nexus, droughts and flooding, green infrastructure, public health and global climate security, among others. **Don't unsubscribe if you are interested in some of these topics and you will continue to receive webinar alerts.**

Access the arsenal of free climate education webinar recordings in the SSF archives.

<http://securityandsustainabilityforum.org/archives/webinars>





Edward Saltzberg, Ph.D.
Managing Director
Security and Sustainability Forum



The Security and Sustainability Forum, 1006 N Tuckahoe Street, Falls Church, VA 22046

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From: Korn Ferry PROFILOR
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Subject: SURVEY DUE DATE PASSED REMINDER: Feedback for George Hull

Your recommended survey due date has passed. If you take action now your feedback can be included in the participant's report.

If you experience any difficulty getting to the Internet, please contact your internal help desk. For any other technical problems, please send an e-mail to KornFerry_support@datasltn.com.

To complete and submit your confidential survey, please go to this web site:

Ex. 6 - Personal Privacy

User ID: Ex. 6 - Personal Privacy

Password: Ex. 6 - Personal Privacy

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--- Sent To reeder.john@epa.gov ---

To: Reeder, John[Reeder.John@epa.gov]
From: Sustainable City Network
Sent: Thur 6/1/2017 12:07:07 AM
Subject: Top News: Lean Urbanism Recalls a Simpler Time

[View this e-mail in your browser.](#)

May 31, 2017

Lean Urbanism Recalls a Simpler Time

Making Small Possible in a Red-Tape World

By Julianne Couch

A traffic jam in Miami suggests to some that modern urbanization needs a reboot.

Over the last several decades, real estate developers and urban designers have watched building code books swell from the size of small booklets to the size of dictionaries.

Some say the increase in regulations has been essential to protect life, limb and property. Others think politics, special interest groups and neglect have supplanted common sense to create a hopelessly complex array of outdated, expensive and unnecessary mandates that serve to push small developers out of the marketplace altogether.

The Project for Lean Urbanism, created by a nonprofit group of architects, engineers, planners and policymakers, is trying to reverse that trend. The group is launching pilot projects in four U.S. cities with the goal of stimulating entrepreneurship and economic growth by cutting red tape and providing free tools that make the development process less intimidating for beginners. The four cities -

Latest News
Lafayette, La., Chattanooga, Tenn., Saint Paul, Minn., and Savannah, Ga. - were chosen for their commitment to lowering the barriers to small-scale economic development.

Action Taken to Postpone Power Plant Effluent Compliance
One of the groups behind the effort is the Congress for New Urbanism (CNU), which works to advance the concept of New Urbanism to guide public policy and create "vibrant and walkable cities, towns, and neighborhoods where people have diverse choices for how they live, work, shop, and get around," according to the organization's charter.

Pittsburgh Driving Development of Green Innovations
A key figure in the CNU is Andres Duany. In an address at a conference in Dallas, Duany explained that New Urbanism was once a revolutionary approach to replicating the pre-1970s way of urban development. Today, he says, the movement needs to be reconsidered.

10 Midwestern Cities Where Solar Power Has a Big Payoff

SEATTLE -- Just because you don't live in the sunniest region of the U.S. doesn't mean you can't benefit from solar power. There is act...

Governor Announces \$35 Million to Expand After-School Programs

ALBANY, N.Y. -- Governor Andrew Cuomo announced \$35 million in funding available for high-need school districts across New York to establish q...

Study Documents Job Growth from Energy-Saving Tax Incentive

WASHINGTON -- As many as 77,000 new design and construction jobs would be created annually over 10 years, along with almost \$7.4 billion...

Indianapolis Recertifies and Becomes 4-Star Community

WASHINGTON -- Earlier this month, the city of Indianapolis, Ind., became the first Certified STAR Community to recertify under the STAR ...

NLC Reveals Top 10 Issues That Matter to Cities in 2017

WASHINGTON -- A comprehensive analysis of mayoral state of the city speeches released by the National League of Cities finds that econom...

FROM OUR VALUED SPONSOR



North Carolina Awarded Grant to Protect Water Quality

WASHINGTON -- The U.S. Environmental Protection Agency recently awarded \$2,652,592 to the North Carolina Department of Environmental Qua...

U.S. Sues Fiat Chrysler for Alleged Clean Air Act Violation

WASHINGTON -- The Department of Justice, on behalf of the Environmental Protection Agency, recently filed a civil complaint in federal c...

National Tribal Energy Summit Explores Energy Sovereignty

WASHINGTON -- Representatives from tribal and state governments, federal agencies, private industry, utilities, and academia came togeth...

EPA Stays Landfill Methane Rules

WASHINGTON -- The U.S. Environmental Protection Agency announced a 90-day administrative stay for the August 2016 New Source Performance...

County Wins Seven National Association of Counties Awards

PHOENIX -- Seven Placer County programs won awards this year from the National Association of Counties, recognizing innovation in count...

Creativity Flows in Intersection Design Contest for Six Points

FORT WORTH, Texas -- Scout Harrell won the most votes in the Fort Worth Intersection Design Contest, so her pavement design will be featured a...

Student's Plans to "Disrupt" Urban Flooding Wins EPA Award

WASHINGTON -- The U.S. Environmental Protection Agency has announced the winner of its "Patrick H. Hurd Sustainability Award" is Adam Na...

Kaiser Permanente Honored With 17 Environmental Awards

OAKLAND, Calif. -- In recognition of its groundbreaking achievement and innovation in health care sustainability, Kaiser Permanente, the natio...

Online Course

Lean Thinking: Process Management Made

Online Course

The End of Tree Plagues

How do we blunt Emerald Ash Borer (EAB) losses, stop the next tree plague from devastating our communities, and create a better, stronger, resilient future forest?

Sustainable City Network will host a 4-hour online course June 7-8 for civil engineers, landscape architects, architects, urban foresters, planners, or anyone responsible for the care of trees. It will provide professionals the tools to communicate and implement a staged Ash tree canopy removal and replacement with a resilient future forest.

The course will demonstrate how to stage Ash tree loss impacts from EAB over time to optimize budgets, utility and social benefits during this traumatic tree crisis.

Product & Industry Announcements

Sustainable City Network and the Northwest Environmental Training Center have teamed up to offer this 6-hour online course June 20-22 on the Lean process improvement system.

Nova Bus Equips Montreal with Its First Fully Electric Buses
MONTREAL -- Nova Bus has announced that Montreal is the first city in North America to put Nova Bus 100 percent electric buses in service. The...

Our Lean Master certified instructor, Brion Hurley, is principal Lean consultant at Rockwell Collins. He will introduce the history of Lean concepts, derived from the Toyota Production System, and explain how and why they have come full-circle back to the United States.

Republic Services Reduces Emissions by Using More Natural Gas
PHOENIX -- Republic Services, Inc., announced that the company will increase its usage of renewable natural gas by three times what it...
VR Completes Forest Gooding Installation of Aerol LED Lighting
Results of Lean initiatives have led to increased customer and stakeholder satisfaction, reduced costs, reduced risks, increased sales, and more flexible and agile organizations. Perhaps the largest benefit has been more engaged employees, where people enjoy the work they do.

Lean is Not a New Concept as this Approach has been used by many companies and organizations for the past three decades. However, most of the effort over that time has been done at large corporations, and only recently have they been adopted and embraced by smaller organizations and agencies. Examples of lean successes can be found within city and state agencies, utilities, nonprofits, law firms, military, public schools, startup companies, movie studios and even farming!

[Learn more...](#)

Free Webinar

FEMA Reporting: A Sustainable Approach

Sustainable City Network will present the free 1-hour webinar FEMA Reporting: A Sustainable Approach on Tuesday, June 6, beginning at 4 p.m. Eastern Time (1 p.m. Pacific).

A disaster could happen any minute — is your local

government
prepared to submit
required reports to
the Federal
Emergency
Management
Agency? Or, will
your team waste
hundreds of hours
scrambling to
provide FEMA with
activity plans, time
records, material
usage, and photos
for reimbursement?

Join the City of
Arlington, TX Parks
and Recreation
Department as
they:

- Walk you through
a real-life flood
scenario they
experienced.
- Cover disaster
reporting tips and
best practices.
- Share techniques
for efficient FEMA
reporting.
 - Discuss using
historical data to
plan for the future.

[Register now...](#)

[Read more...](#)

Online Course

Creating a Sustainability Strategy

Sustainable City
Network will present
a webinar series in
July for any
personnel who are
responsible for
developing
sustainability plans,
greenhouse gas
emission
inventories, climate
action plans or any

Sustainable City Network operates a website (www.sCityNetwork.com), customized e-newsletters, online training, consulting, and best practices information, and interactive tools dedicated to providing quality and timely information on sustainability products, services and government, education and healthcare.

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Network** for a
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Dubuque, IA 52001
institution.

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The 6-hour online course, Creating a Sustainability Strategy for Your Organization, will be delivered live on July 11-13. Sessions will be recorded so registrants may attend live or via on-demand streaming video.

This course, featuring veteran instructor Antonia Graham, will focus on the implementation and strategic thinking that is required to implement a Sustainability Plan. Too often, we write a plan and have the greatest intentions of implementing all of the metrics only to have these ideas fall flat because of politics, organizational culture, or lack of support from the top. This course will teach you how to incorporate storytelling and systems thinking into a strategic plan that gets your plan implemented and enables you to move the needle further and faster to create a more sustainable community.

This course will be presented in three 2-hour sessions held

on consecutive
days, July 11, 12
and 13, 2017. Class
sessions will begin
promptly at 10 a.m.
Pacific, 11 a.m.
Mountain, noon
Central and 1 p.m.
Eastern. (Group
rates available on
the registrations
page.)

563.588.3853

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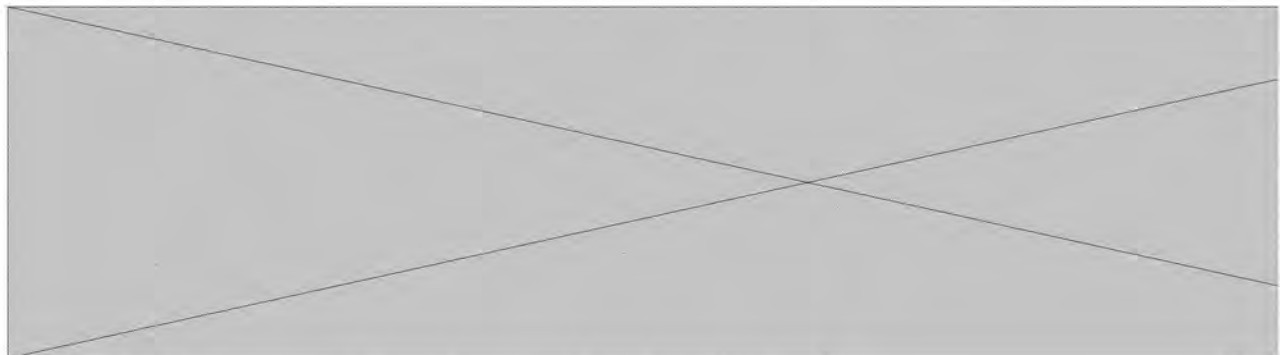
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June 2017 Issue 2

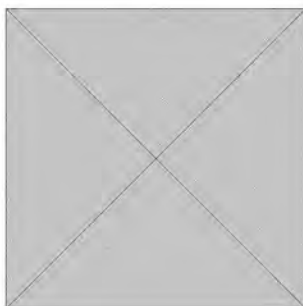


Media Measurement News is a weekly educational newsletter published by Glean.info, the media monitoring and measurement service, for professionals in public relations (PR), marketing, competitive intelligence and communications. Glean.info was previously CyberAlert LLC.

"There are no traffic jams along the extra mile."
— *Roger Staubach*



Learning Snapchat Metrics: Winning in the 'Wild West' of Measurement



69% of C-level executives say their company's marketing strategy is effective; only **55%** of marketers agree. (*HubSpot*) — [Tweet this!](#)

72% of journalists say they track how often their stories are shared on social media. (*Muck Rack*) — [Tweet this!](#)

Image source: Ben Phillips via Flickr

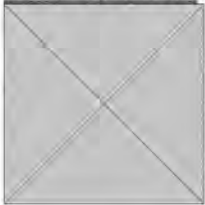
Although Snapchat's lack of formal, within app analytics poses a challenge to brands, marketers can still employ social media measurement techniques to learn how their snaps resonate with their customers. Measurement on Snapchat may require more effort than on other platforms, but is well worth the invested time if marketers learn how to improve their Snapchat campaigns. [Read More »](#)

How to Combine SEO & Influencer Marketing for Outsized Results



Although influencer marketing has become a well-established PR and marketing strategy, many brands don't pursue its potentially substantial SEO benefits. The right influencers can help improve a brand's domain authority and search results, leading to more website traffic and conversions. [Read More »](#)

How to Get Customer Testimonials that Drive Sales



Customer testimonials bring credibility, authority and more customers - but only when done well. These tips can help create testimonials that break down any roadblocks prospects have about purchasing your products. [Read More »](#)

New Guide on Media Measurement & Analytics Offers Wealth of Valuable Insights



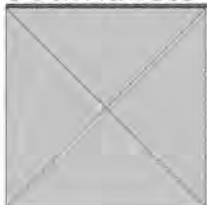
The free ebook 2017 Ultimate Guide to Media Measurement for PR & Marketing offers in-depth advice from leading experts on proving and improving the value of PR and marketing. With 26 separate articles, the handbook's content provides valuable insights into top media monitoring trends and tips on effective social media monitoring & measurement. Professionals in PR, marketing, competitive intelligence and other sectors can benefit from the guide's superb content. [Read More »](#)

The Chasm Between Staff & the C-Level on Marketing Effectiveness



A disconnect between C-level executives and lower-level marketers, revealed in a recent survey, surprised industry observers. The widely disparate opinions about the effectiveness of their company's marketing strategies could harm sales and company morale, experts warn. [Read More »](#)

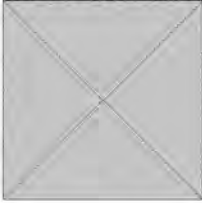
Tricks of the PR Trade: How to Get Journalists' Attention



Both freelance and staff journalists typically track social media shares of the articles they've written. That means engagement with journalists on Twitter, their favorite network, can help develop strong media relationships. [Read More »](#)



Improve Your Media Monitoring & Web Searches with Advanced Search Operators



Advanced search operators are invaluable for searching the web. Almost everyone can benefit from using advanced operators such as "AND", "OR", "AND NOT" and many others when making online searches or when using a media monitoring service to get daily results from an ongoing search. Searching with advanced operators is actually quite easy - and search results are far better than simple keyword searches. [Read More »](#)

Aggressive Plans to Kill AVEs as PR Metric Draw Praise - and Skepticism



Aggressive efforts to eradicate advertising value equivalencies as a communications metric is controversial among PR professionals. Some say disciplinary actions aimed at those who use the AVEs metric is going too far, while they agree that AVEs are not a valid metric. [Read More »](#)



Top 10 Tips to Stay Secure Online While Traveling this Summer

24BY7 Security

Artificial Intelligence 2017: Top 100 Influencers, Brands and Publications

Onalytica

The Communications Pro's Guide to Effective Word Choice

Spin Sucks

How to Split Your Screen and Manage Your Work in Windows 10

Digital Trends

9 Ways to Protect Your Customers' Data and Keep Them in the Loop

TNW



Webinar: Spend Less, Achieve More: Why You Should Embrace the Customer Data Platform Evolution, June 14 at 3 p.m. Presented by Marketing Week. Free.

Webinar: The Content Formula: How to Create and Measure Content That Converts, June 15 at 12 p.m. Eastern. Sponsored by MarketingProfs. Free for MarketingProfs Pro members.

Webinar: Protect Your Organization Against FTC Crackdowns Using Internal Comms, June 20 at 12 p.m. Eastern. Sponsored by WOMMA.

Webinar: From Data to Insight to Action: Reaching Social Intelligence Maturity, June 20 at 11 a.m. Eastern Presented by Digimind.

Webinar: How to Use Webinars to Increase Customer Engagement, June 21 at 1 p.m. Eastern time. Presented by MarketingProfs. Free.

Webinar: Rules of Engagement for Influencer Marketing, July 12 at 1 p.m. Eastern, Sponsored by WOMMA.

Webinar: 5 Ways to Protect and Grow Your PR Budget in a Digital Comms Playground, Sponsored by the PRSA. Free for members.

Conference: Content Marketing World, Sept. 5-8 at the Huntington Convention Center in Cleveland, OH. \$2,395 for regular all-access pass.

Conference: Inbound 2017, Sept. 25 to 28 at the Boston Convention & Exhibition Center. Presented by HubSpot. \$1,299 for an all-access pass through July 15

Conference: PRSA International Conference, Oct. 8-10 at the Boston Marriott Copley Place. PRSA member regular rate: \$1,495.

Conference: B2B Marketing Forum, Oct. 3-6 at the Westin Boston Waterfront. Presented by MarketingProfs. All-access pass \$2,295.

Social Media Monitoring & Measurement Methods
that Produce Actionable Insights for Marketing & PR
The Benefits of Social Media Analytics
10 Main Components of a First-Class Press Kit
The New Must-Have PR Skills
10 Top Technology Tools for Public Relations Pros
8 Ways Law Firms Benefit from Media Monitoring

The listing for this issue includes PR job openings and marketing positions — with detailed job descriptions for each. Readers are invited to submit job postings to jobpostings@cyberalert.com.

Internship: PR Writer / Social Media Marketing -
Glean.info, Stratford, CT
Public Relations Director - Anthem, Inc., Thousand
Oaks, CA
Public Relations Manager - USO, Arlington, VA
Manager, Communications & Public Relations -
Shedd Aquarium, Chicago, IL
Specialist, Public Relations & Communications -
American College of Rheumatology, Athens, GA
Public Affairs Specialist - NSA, Fort Meade, MD
Government Relations - Western Connecticut Health
Network, Danbury, CT
Assistant Director Athletic Media Relations -
University at Albany, Albany, NY

Marketing & Communications Manager - WestSide
Baby, Seattle, WA
Digital Media Specialist - BioBridge Global, San
Antonio, TX
Senior Marketing Communications Analyst -
Bridgestone Nashville, TN
Digital Marketing Analyst - Academic Partnerships,
Dallas, TX
Content Marketing Data Analyst - InfoScout, San
Francisco, CA
Marketing Communications Manager - Greater
Baltimore Medical Center, Baltimore, MD





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To: Reeder, John[Reeder.John@epa.gov]
From: Cyber Security Executive Order Implementation
Sent: Thur 6/15/2017 12:09:46 PM
Subject: [SPAM] Register for July 12: The President's Cybersecurity Exec Order (EO) Workshop

**Please Review and Forward to
Your Government Executives, Managers and Staff
Who Play a Part in Agency Cyber Security Management or Implementation**

Potomac Forum Training Workshop
**Implementing the President's
Cybersecurity Executive Order (EO)
Training Workshop**

*A "How To" Workshop to Implement the
Requirements of the EO and its Reporting Requirements*

Date: Wednesday, July 12, 2017

Early Bird Reduced Registration Fee Until June 17th

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(703) 683-1613
info@PotomacForum.org

**Location of Workshop:
Willard InterContinental Hotel
Washington, D.C.**

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and NOT Sales or Marketing Events**

**Workshop for Government & Industry Partners
Press is Not Permitted to Encourage
Candid Discussion in our Learning Environment**

Additional Government Speakers are being
approved for participation by their Agencies.

Government Speakers:

Dr. Ron Ross

NIST Fellow

**Author of the NIST Risk Management Framework (RMF) and
Numerous NIST Cyber Security Publications**

Jarvis Rodgers

Information Technology Audit Director

Office of Inspector General

Department of Health and Human Services (HHS)

Additional Government Speakers are being
approved for participation by their Agencies

Potomac Forum Workshops are 100% educational programs and not
sales or marketing events!

Overview:

This workshop will focus on the President's EO on Cybersecurity and discuss its requirements. A key requirement is the implementation of NIST's Cybersecurity Framework (CSF). We will present an understanding of the CSF and NIST's Risk Management Framework (RMF) which is a key component of the CSF. The CSF and RMF are critical for the federal government in its efforts to mitigate risk within enterprise information systems. The workshop will provide detailed guidance on the integration of the CSF and RMF into a holistic Cybersecurity solution. In addition, the workshop will address the EO reporting requirements for the first 90-day report and the other reports identified in the EO.

Hear from industry experts and government officials tasked with implementing robust cybersecurity and risk management strategies along with learning how NIST's CSF and RMF can be effectively implemented to reduce the risk of cyber-attacks. Listen to a government panel of CIOs and CISOs to understand the challenges they are facing on a day-to-day basis and how implementation of NIST's CSF and RMF helps them identify the risks and what it takes to mitigate those risks. Gaining insights from the

panel and peer interactions at the workshop should be invaluable in implementing the President's EO and moving the needle forward in improving federal cybersecurity.

What You Will Learn:

- **The approach used by the NIST RMF**
- **The value of the integration of the NIST RMF with the NIST CSF**
- **Development of agency Risk Management Strategies**
- **Changes in federal information system authorization requirements and guidelines**
- **Guidance into what agencies can expect from the NIST RMF and new CSF processes**
- **Importance of Risk Assessments (RA), Security Control Assessments (SCA), and Security Testing & Evaluation (ST&E)**
- **Security control categorization and how it is used to manage risk**
- **NIST SP 800-53A, Guide for Assessing the Security Controls in Federal Information Systems and Organizations: Building Effective Security Assessment Plans; NIST SP 800-37 Rev. 1 Guide for Applying the Risk Management Framework to Federal Information Systems: A Security Life Cycle Approach and NIST SP 800-39 Managing Information Security Risk**
- **Reporting Requirements for the Executive Order**
- **Best Practices for Responding to the Executive Order**

Why You Should Attend

- **Review the key steps within the NIST RMF and CSF**
- **Obtain practical knowledge of how NIST RMF and CSF are incorporated into information system security**
- **Gain insight into conducting and implementing NIST RMF and CSF in your organization**
- **Collect information on how NIST frameworks can be leveraged to enhance the security of your organization**
- **Learn how risk management and cybersecurity are essential for regulatory compliance**
- **Learn from risk management, security and OIG colleagues in Federal, State and Local Governments**
- **Learn how other Agencies are responding to the EO**

Who Should Attend:

- **CIOs, CISOs and Staff**
- **IT security and risk management practitioners**
- **IGs and Staff**
- **Program Managers responsible for risk management**
- **Government Employees who want to better understand organization risk management**
- **Executives who oversee risk management for the government**
- **All government executives, managers and staff who need to better understand risk management and implementing the President's Executive Order**

CEUs Awarded Upon Workshop Completion

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"Send-A-Team" Registration Fees

No Press to Promote Candid Discussion

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Future Potomac Forum Training Workshops

- 1. Managing Government Records (RM) Training Workshop XIV
Agency Self Assessments are in to NARA
-- How Can You Improve Your Scores?
Tuesday, June 20, 2017**

- 2. How to Meet the Workforce Requirements of the President's
Executive Order 13781 Training Workshop
What Federal Executives, Managers, and Supervisors Need to Know to
Support the Goals of the Executive Order for Reforming the Federal
Government and Reducing the Federal Civilian Workforce
Wednesday, June 28, 2017**

- 3. Implementing the President's Cybersecurity Executive Order (EO)
Training Workshop
A "How To" Workshop to Implement the Requirements
of the EO and its Reporting Requirements
Wednesday, July 12, 2017**

**All Workshops at the
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Learning to Analyze and Correlate Sedimentary Relationships
by: Tim Kemmis, PhD, PG and Dan Kelleher, PG, CIPM

THE USE AND MISUSE OF THE UNIFIED SOIL CLASSIFICATION SYSTEM:

Improving Field Procedures, Techniques and Characterization
by: Tim Kemmis, PhD, PG

THE MEANING OF SOIL AND SEDIMENT COLOR:

Effects from Geologic Material, Ground Water and Chemistry
by: Art Bettis, PhD

ROCK CORE LOGGING FOR HYDROGEOLOGIC PROJECTS:

Assessing Recovery, RQD, Fractures and Stratigraphy
by: Dan Kelleher, PG, CIPM

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50	15 months	\$79.00	
25	15 months	\$84.00	

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- **Stewart A. Wiley, LSP, Vice President, Haley and Aldrich**

"That was easy. Much Appreciated, these webinars will greatly help me renew my MA LSP license."

- **Kurt Klages, MA LSP, Jewel Corp, Massachusetts**

"The seminar was great : compact, straight to the point, precise, professional environment, etc."

- **Jude Tremblay, ing. Le Groupe S.M. International inc., Vice-president Infrastructures, Ouest du Quebec**

Midwest GeoSciences Group
1950 Greyhound Pass, Suite 18-200
Carmel, IN 46033-7630
Phone: 763.607.0092

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To: Reeder, John[Reeder.John@epa.gov]
From: Sustainable City Network
Sent: Thur 6/15/2017 2:19:04 AM
Subject: Top News: Growing Sustainable Communities Conference Slated Oct. 3-4

[View this e-mail in your browser.](#)

June 14, 2017

Growing Sustainable Communities Conference Slated Oct. 3-4

10th Annual Conference Hosted on Dubuque Riverfront

**Dubuque's Growing Sustainable Communities
Conference is held annually at the Grand River
Center in the Port of Dubuque, overlooking the
Mississippi River.**

DUBUQUE, Iowa – The Growing Sustainable Communities Conference celebrates its 10th anniversary at the Grand River Center in the Port of Dubuque on Oct. 3-4.

Registration is now open on the conference web site at www.GSCDubuque.com.

The Growing Sustainable Communities Conference is the largest and longest standing sustainability conference in the Midwest, according to Dubuque city officials, who have hosted the conference annually since 2008. Sustainable City Network, a Dubuque-based trade magazine, has co-hosted the event with city staff since 2011.

The conference includes more than 30 workshops, mobile tours and keynote presentations on the latest developments in community sustainability and resiliency initiatives.

This year's conference will include workshop speakers with a wide range of expertise, including representatives from the U.S. Environmental Protection Agency, the Arbor Day Foundation, the

Latest News
Iowa Economic Development Authority, the Econservation Institute, Great Plains Institute, Green Iowa AmeriCorps, the Iowa Clean Cities Coalition, the Midwest Renewable Energy Association, the Sustainable Iowa Land Trust, The Nature Conservancy and businesses such as General Electric, HDR, Shive-Hattery, and many others.

Ohio Hospitals' Energy Conservation Promotes Health, Cut Costs
Speakers from municipal governments large and small will also present case studies on the sustainability initiatives in their respective communities, from large cities like Minneapolis, New Orleans, Nashville, Kansas City, Charlotte and Des Moines, to Broward County, Fla., and the small and mid-sized communities of Brookings, S.D., Columbia, Mo., Huntington Beach, Calif., South Euclid, Ohio, Madison, Wis., New Lebanon, Ohio, and the Iowa communities of Cedar Rapids, Muscatine, Cedar Falls and Dubuque. Researchers from numerous universities and nonprofits will also present their findings.

[Read More...](#)

Avera eCARE Expands Reach with New Telemedicine Hub

SIOUX FALLS, S.D. -- Avera eCARE, based in Sioux Falls, S.D., is the most robust telemedicine network in the world offering comprehensive heal...

NRDC Sues to Block Trump's Methane Pollution Rollback

WASHINGTON -- The Trump administration violated the Clean Air Act in suspending critical protections against methane leaks and other dan...

Energy-Efficient Affordable Housing for Seniors Announced

ALBANY, N.Y. -- Governor Andrew Cuomo announced the completion of a \$9.3 million housing development for seniors in the city of Hornell. The p...

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Industries Urge Governor to Lead Transition to Clean Energy

CARSON CITY, Nev. -- National business groups representing the geothermal, solar, and wind power industries recently sent a letter to Nevada G...

The Best Complete Streets Policies of 2016 Announced

Product & Industry Announcements

WASHINGTON -- As of the end of 2016, more than 1,200 jurisdictions in the United States have made formal commitments to streets that are...

PennDOT Awards Jacobs Active Traffic Management Project Organizations Seek to Improve Water Infrastructure

DALLAS -- Jacobs Engineering Group Inc., was awarded a ten-year, multi-million dollar contract from the Pennsylvania Department of Transportation to partner with the U.S. Environmental Protection Agency to invest in th...

EarthTronics Introduces Adjustable LED for Wide-Area State Proposes Removing Barriers for Military Students

ALBANY, N.Y. -- The New York State Education Department proposed regulatory amendments to remove barriers to educational programs for children...
MUSKEGON, Mich. -- EarthTronics, dedicated to developing innovative energy efficient lighting products that provide a positive economic and en...

Administration Awards \$20.2 Million in Clean Communities. SageGlass Installs Dynamic Glass at New Academic Center

MINNEAPOLIS -- SageGlass, manufacturer of smart electrochromic glass, announced the completed installation of 25,000 sq ft. of dynamic...
TRENTON, N.J. -- The Christie Administration is awarding \$20.2 million in annual Clean Communities grants to help municipalities and counties ...

Mayor Launches EV Car Share Program for Disadvantaged Rockford Receives \$700,000 to Redevelop Brownfield Sites

LOS ANGELES -- A groundbreaking new car share program will help CHICAGO -- The U.S. Environmental Protection Agency announced the city of Rockford, Ill., has been selected to receive a \$700,000 Brownf...

Boulder Steps Up Commitment to Transparency and Innovation

WASHINGTON -- City Manager Jane Brautigam will sign the City of Boulder's open data policy, designed to increase transparency and accoun...

Communities Receive Funds for Scrap Tire Market Development

LANSING, Mich. -- Old vehicle tires will soon find a new purpose thanks to \$2.9 million in grants from the Michigan Department of Environmenta...

'State of Downtown' Report Captures Steady Growth

FORT WORTH, Texas -- Downtown Fort Worth has maintained a 92 percent average retail occupancy rate and experienced a 97.5 percent increase in ...

Online Course

Lean Thinking: Process Mgmt Made Easy

Sustainable City Network and NWETC have teamed up to offer this 6-hour online course June 20-22 on the Lean process improvement system.

This course will challenge your ideas about how you think about and evaluate the work you do.

Our Lean Master certified instructor, Brion Hurley, is principal Lean consultant at Rockwell Collins. He will introduce the history of Lean concepts, derived from the Toyota Production System, and explain how and why they have come full-circle back to the United States.

Results of Lean initiatives have led to increased customer and stakeholder satisfaction, reduced costs, reduced risks, increased sales,



Vol. 23: Read it now

and more flexible
and agile
organizations.
Perhaps the largest
benefit has been
more engaged
employees, where
people enjoy the
work they do.

Examples of Lean
successes can be
found within city
and state agencies,
utilities, nonprofits,
law firms, military,
public schools,
startup companies,
movie studios and
even farming!

[Read more...](#)

Online Course

**Creating a
Sustainability
Strategy**

Sustainable City
Network will present
a webinar series in
July for any
personnel who are
responsible for
developing
sustainability plans,

Sustainable City Network operates a website (www.sCityNetwork.com), customized e-newsletters, online training, consulting, and interactive tools dedicated to providing quality and timely information on sustainability products, services and best practices to business, government, education and healthcare.
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**Sustainable City
Network**
801 Bluff Street
Dubuque, IA 52001
563.588.3853
Sustainable City
strategy for a
community,
business or
institution.

The 6-hour online course, Creating a Sustainability Strategy for Your Organization, will be delivered live on July 11-13. Sessions will be recorded so registrants may attend live or via on-demand streaming video.

This course, featuring veteran instructor Antonia Graham, will focus on the implementation and strategic thinking that is required to implement a Sustainability Plan. This course will teach you how to incorporate storytelling and systems thinking into a strategic plan that gets your plan implemented and enables you to move the needle further and faster to create a more sustainable community.

This course will be presented in three 2-hour sessions held on consecutive days, July 11-13. (Group rates available.)

Sustainable City Network operates a website (www.sCityNetwork.com), customized e-newsletters, online training, conferences and other interactive tools dedicated to providing quality and timely information on sustainability products, services and best practices to leaders in government, education and healthcare.
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Sent to Reeder.John@epa.gov. [Unsubscribe](#) | [Update Profile](#)

To: Reeder, John[Reeder.John@epa.gov]
From: Corinna Natale
Sent: Mon 6/12/2017 6:21:59 PM
Subject: The Training Connection's June Newsletter
[JUNE TTC Newsletter.pdf](#)

Hello everyone!

We have the June Newsletter ready for you!

Our monthly newsletter offers ideas for how to better manage your mentoring partnership and tips and techniques for specific work/life issues.

Enjoy,
The Training Connection Staff

p.s. To access the newsletter from The Mentoring Connection please follow this link:
<https://www.mentoringconnection.com/tmc2/Secure/Library/DataFile.aspx?Do>

Your privacy is important to us. Please read our online [Privacy Statement](#).

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JUNE 2017

The Training Connection's Newsletter What Motivates You: Why do you do what you do?

By: Kathy Wentworth Drahosz

The most successful and happiest people in today's work environment are those who are doing work that is compatible with their value system and the values of the organizations they work for. Have you ever worked for an organization where the corporate values were completely the opposite than your values? Perhaps you are motivated by being a part of something larger than yourself and making a difference. And the organization you work for is driven by the bottom line and demonstrating a good return on investment.

Can you be successful in an organization that values different things? Will you be seen as a valued contributor to the organization even when you are motivated by different values? The answer is yes, but it takes tons of self-awareness and political savvy.

The following tips will help you align your values with those of the organization:

Find work that is compatible with what you value. Ideally your job should be closely aligned with what gives you a sense of meaning and purpose. When you find work that is compatible with who you are at the deepest levels (your values), you get excited about what you are doing and why you are doing it. In doing so, you are not just putting in your time and picking up a paycheck, you are plugged in on many levels (emotionally and intellectually).

Uncover projects and tasks that give you a sense of purpose. Finding compatibility may not mean you have to leave your current organization or position. It may mean you have to look around and volunteer for tasks that are congruent with your value system. For example, if you are driven by helping others, volunteer to be a mentor. Or explore the steps that are necessary to move into a supervisory position. Supervisors have an opportunity to help people grow every day.

Understand the values and culture of the organization.

The values of an organization are deeply held by the organizational leaders and yet not always obvious and apparent to all. Values give continuity to decisions, actions and even promotions. Become a detective—pay close attention to the non-verbal clues that may be churning beneath the surface:

- Is the organization slow to change or does it switch gears frequently? A conservative organization may not reward mavericks or individuals who constantly push innovation and change.
- Does the organization value collaborative decision making or individuals who take decisive and quick actions? An individual who prefers to work independently and thrives on making quick decisions may be perceived as a loose cannon and may not be valued for their individuality.
- What are some behavioral norms of the organization (timeliness to meetings, professional dress, loyalty to the team, positive attitude, challenging status quo, being a team player, honesty and integrity, accountability, etc.) When the behavioral norms of the organization are ignored or challenged, supervisors will and do react strongly, although not necessarily loudly.

Dorothy Leeds (author of Smart Questions) says it best, "It's not enough to do your job well. You must find a way to tune into the vibrations of the organization, read the hidden messages, and pick up on both obvious and faint signals that unerringly point the way to success." In the end, the most successful employees are those who understand their values, the values of the organization and navigates those values with personal and professional integrity.



As you progress through your mentoring journey, you may be asking yourself a number of questions concerning where you are in your career at this moment and where you plan or intend to be down the road. The next time you meet with your mentor, plan to discuss the current values of your organization and how they fit into your own. The following are some

questions to consider:

- What do you value?
 - Does your current position fulfill your values and passions?
 - Are there any positions within the organization that align with your values?
- What types of projects give you a sense of purpose?
- Are there any committees or projects that you could volunteer for that align closely with your value system?
- What are some deal breakers for you when it comes to a professional position/responsibility?
 - Could any of these deal breakers be a part of your current position?
- What are the unwritten rules of the organization?
 - Teamwork rules? Feedback rules? Management and decision-making rules?
 - How does your behavior fit?
 - Can you live with them or do you find them too stressful to uphold?
 - In what ways could your behavior be hurting your professional image and career?

EPA-17-0193 and EPA-17-0194-A-001469

The Training Connection, Inc. is dedicated to helping our clients realize the full potential of their employees. Our philosophy is simple: "Everyone has something to contribute and something to learn."

We capitalize on the experiences of successful individuals (mentors) who are committed to developing future leaders. Although having access to a mentor does not guarantee promotion, having the wise counsel and advice of an experienced colleague can help younger or less experienced workers move ahead, learn how to handle various situations, and avoid some of the common pitfalls that can derail a career or delay a promotion.

Let us show you what our knowledge, experience and dedication can mean to you both personally and professionally.

Kathy Wentworth Drahosz
Founder & President

4004 Genesee Place, Suite 109
Woodbridge, VA 22192
703-680-3780

visit our web sites:

www.thetrainingconnection.com
www.mentormentors.com

To: Reeder, John[Reeder.John@epa.gov]
From: Douglas Parsons
Sent: Thur 6/8/2017 12:04:53 AM
Subject: Productive meeting today

John

Thanks for all your kind words. Nice to see you today. Take care and best wishes for everything in the future. Sure it will all work out for you. Hope so!!!! Best, doug

To: Reeder, John[Reeder.John@epa.gov]
From: FSAFEDS
Sent: Wed 6/7/2017 3:10:05 PM
Subject: FSAFEDS App: Managing Your FSA with Ease

[View on Mobile Phone](#) | [View as Webpage](#)

Helpful Tips for June

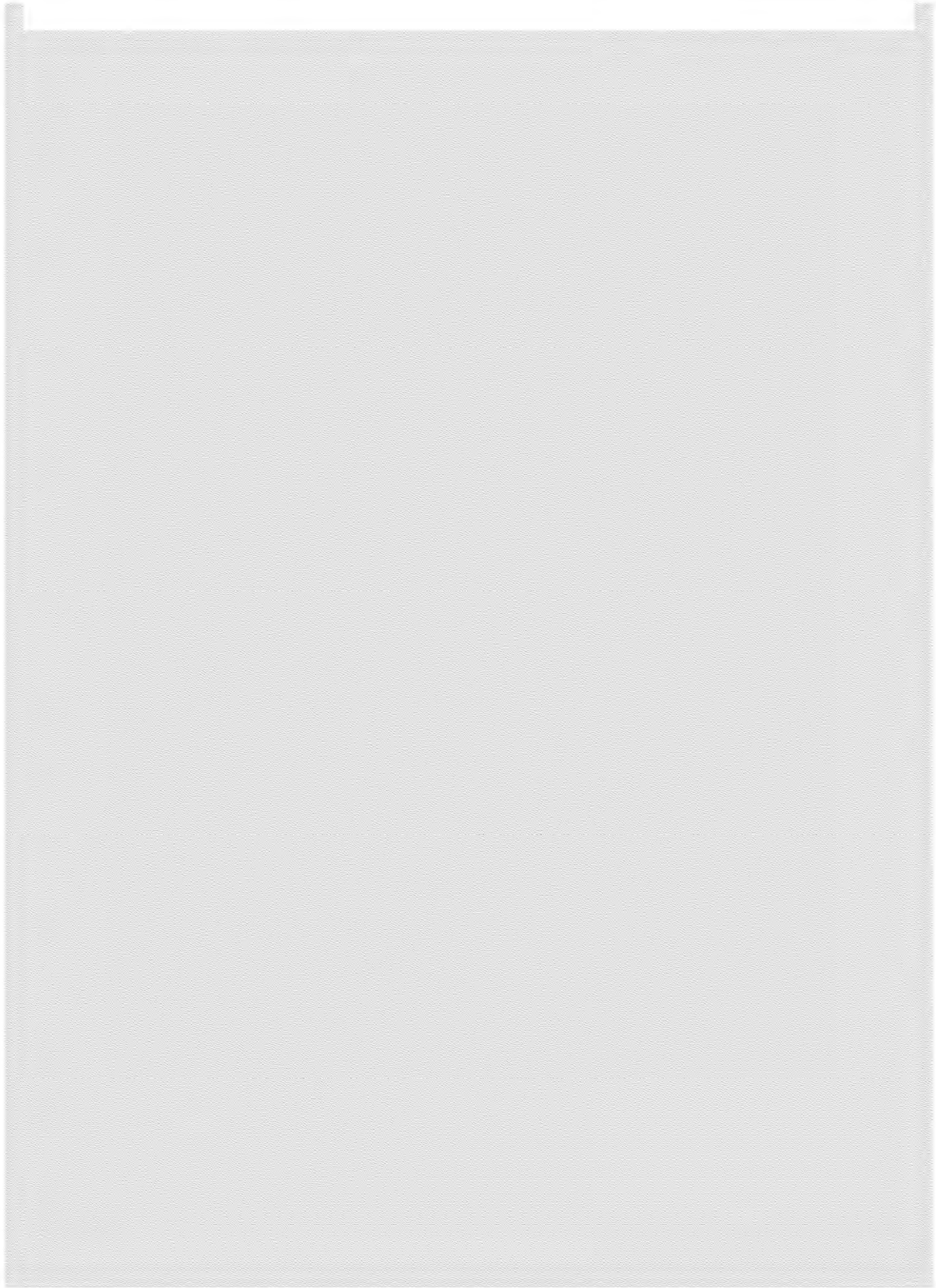
Dear FSAFEDS Participant,

Get to know the [FSAFEDS app](#) – it's the quickest way to manage your Flexible Spending Account (FSA). You'll love the convenience of this app. It's free and simple to use. And, it allows you to manage your FSA – even when on the go.

How to Use It

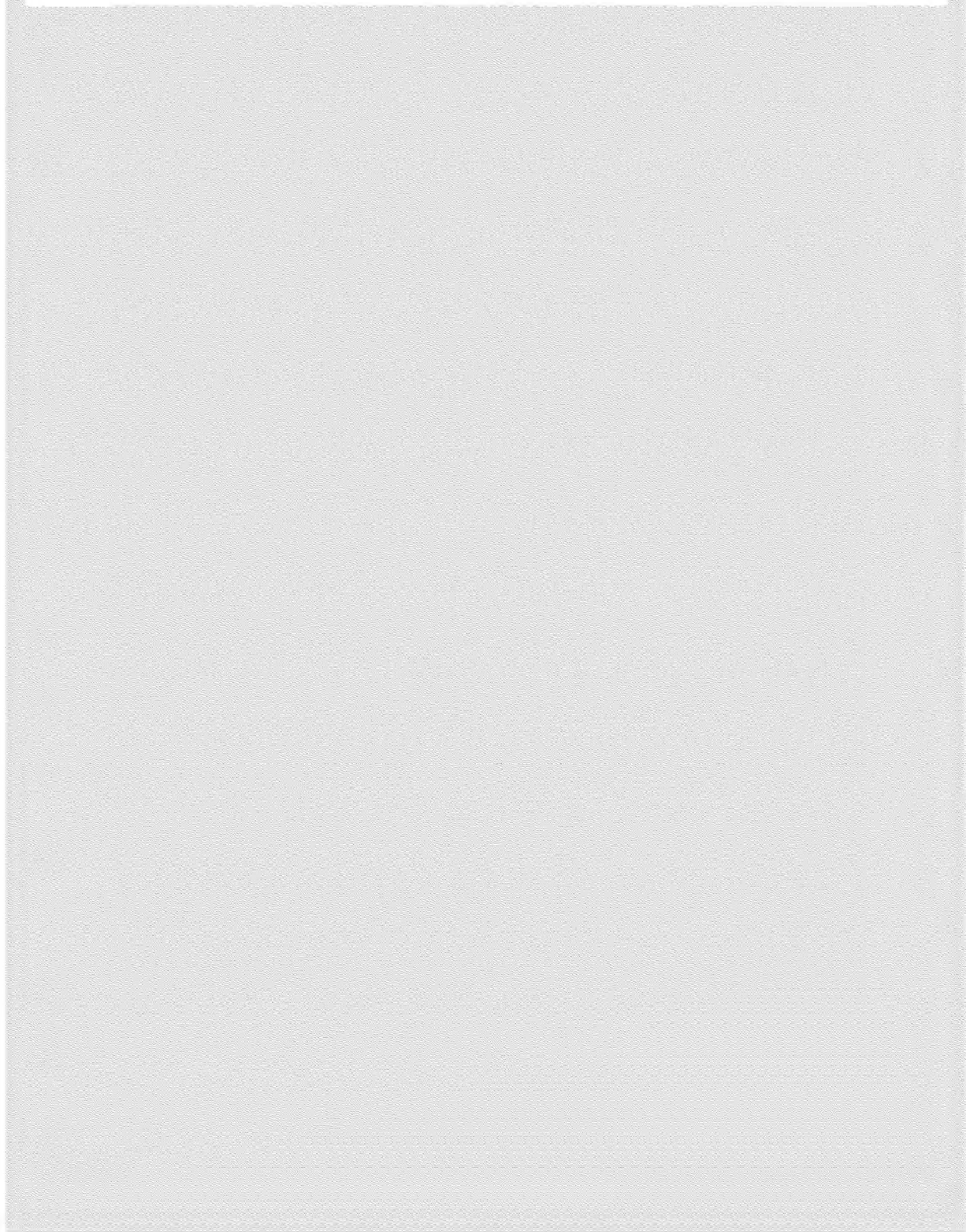
- Check your account balance.
- Submit claims by snapping photos of receipts.
- Have your dependent care provider sign directly in the app to create an electronic receipt.
- Maintain a list of providers so you don't have to retype contact information.
- And much more!

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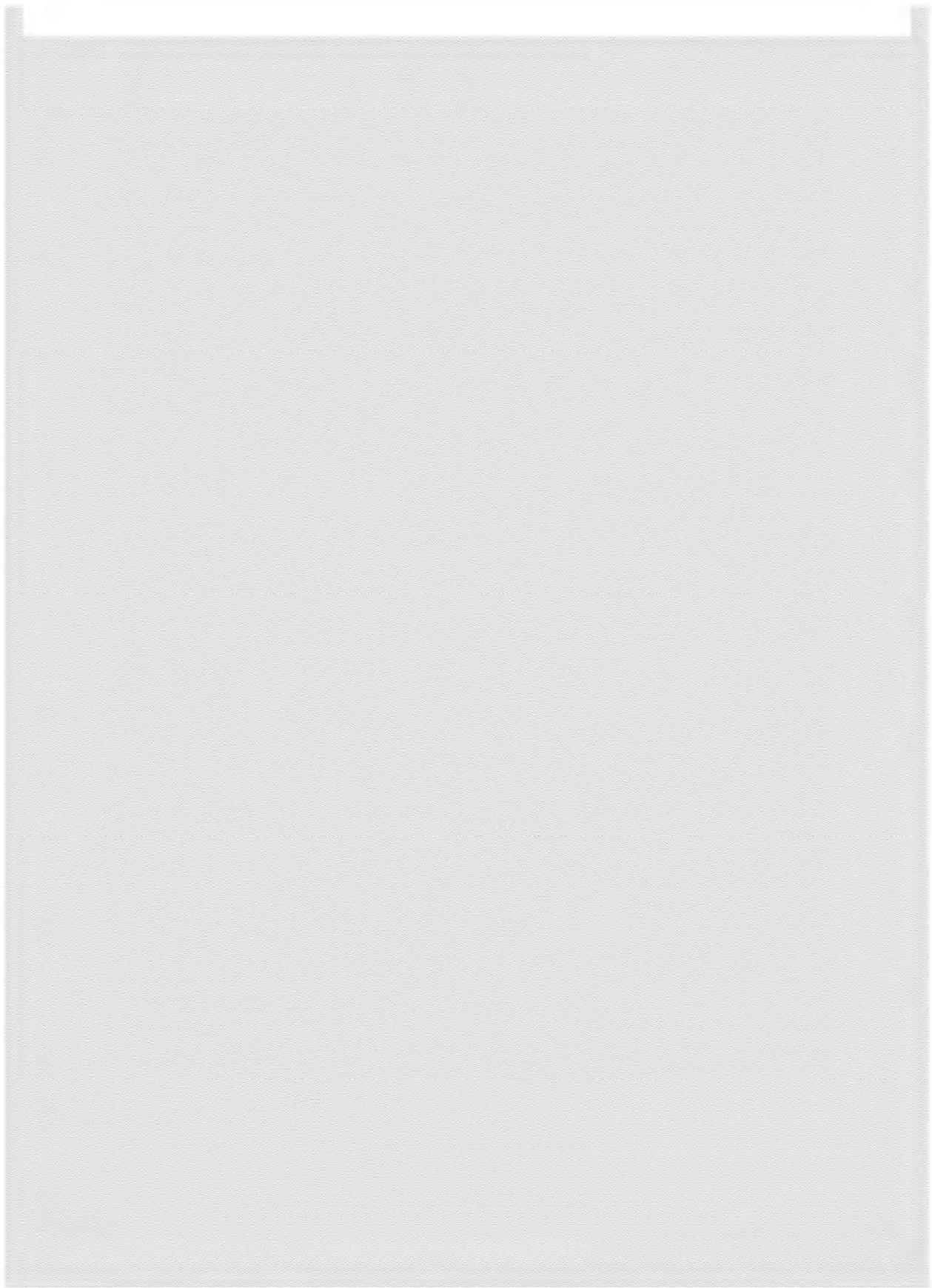
How to Get It

Just go to the App Store or Google Play and download the FSAFEDS app to your mobile device. Then log in to the app with the same username and password as your online account.



More Tips Headed Your Way

Look for additional emails with helpful tips in the near future. In the meantime, learn more about your FSA by browsing the FSAFEDS website at www.FSAFEDS.com. Or when questions arise, contact an FSAFEDS Benefits Counselor Monday through Friday from 9 a.m. until 9 p.m. Eastern Time.



Toll-Free Phone:

877-FSAFEDS (372-3337)

TTY Line: 866-353-8058

International : +1 650-577-5294

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20779
(6/2017)

FSAFEDS Program
5200 Commerce Crossings Dr., Suite 100
Louisville, KY 40229

To: Reeder, John[Reeder.John@epa.gov]; Allen, Reginald[Allen.Reginald@epa.gov]; Lesperance, Twanna[Lesperance.Twanna@epa.gov]
From: Howell, Velveta
Sent: Mon 6/5/2017 1:19:00 PM
Subject: Missing Pay for the Past Payroll Period (Please read and reply ASAP today.)

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy I have a meeting that starts at 9 a.m., MDT/11 a.m., EDT, but will be in my office until then. Thanks in advance for your help. ☺

Velveta

Ex. 6 - Personal Privacy

To: Reeder, John[Reeder.John@epa.gov]
From: Bob Hickmott
Sent: Thur 6/1/2017 8:01:59 PM
Subject: High Fives?

High fives amongst the new Storm Troopers today with abdication of the Paris Acord?

To: Douglas Parsons [Ex. 6 - Personal Privacy]
From: Reeder, John
Sent: Thur 6/8/2017 3:13:28 AM
Subject: Re: Productive meeting today

Thanks Doug. We really should've done this before, and I hope we start up a tradition. Maybe Clive can be the accelerant (trying a big word).

Sent from my iPhone

> On Jun 7, 2017, at 8:05 PM, Douglas Parsons [Ex. 6 - Personal Privacy] wrote:
>
> John
>
> Thanks for all your kind words. Nice to see you today. Take care and best wishes for everything in the future. Sure it will all work out for you. Hope so!!!! Best, doug

To: Krenik, Edward[edward.krenik@bracewell.com]
From: Reeder, John
Sent: Wed 6/7/2017 2:21:17 PM
Subject: RE: Question

Ex. 6 - Personal Privacy

From: Krenik, Edward [mailto:edward.krenik@bracewell.com]
Sent: Wednesday, June 07, 2017 10:07 AM
To: Reeder, John <Reeder.John@epa.gov>
Subject: RE: Question

Ex. 6 - Personal Privacy

EDWARD KRENIK

Partner

edward.krenik@policyres.com

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From: Reeder, John [mailto:Reeder.John@epa.gov]
Sent: Wednesday, June 7, 2017 9:54 AM
To: Krenik, Edward
Subject: RE: Question

Ex. 6 - Personal Privacy

Looking forward to it.

JR

From: Krenik, Edward [<mailto:edward.krenik@bracewell.com>]
Sent: Wednesday, May 31, 2017 10:17 AM
To: Reeder, John <Reeder.John@epa.gov>
Subject: Re: Question

Ex. 6 - Personal Privacy

Sent from my Verizon, Samsung Galaxy smartphone

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From: "Reeder, John" <Reeder.John@epa.gov>

Date: 5/31/17 10:13 AM (GMT-05:00)

To: "Krenik, Edward" <edward.krenik@bracewell.com>

Subject: RE: Question

Ex. 6 - Personal Privacy

Ex. 6 - Personal Privacy

From: Krenik, Edward [<mailto:edward.krenik@bracewell.com>]

Sent: Wednesday, May 31, 2017 10:11 AM

To: Reeder, John <Reeder.John@epa.gov>

Subject: Re: Question

Ex. 6 - Personal Privacy

Sent from my Verizon Samsung Galaxy smartphone

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----- Original message -----

From: "Reeder, John" <Reeder.John@epa.gov>

Date: 5/31/17 10:08 AM (GMT-05:00)

To: "Krenik, Edward" <edward.krenik@bracewell.com>

Subject: RE: Question

Ex. 6 - Personal Privacy

From: Krenik, Edward [<mailto:edward.krenik@bracewell.com>]

Sent: Wednesday, May 31, 2017 9:12 AM

To: Reeder, John <Reeder.John@epa.gov>

Subject: Re: Question

Ex. 6 - Personal Privacy

Sent from my Verizon, Samsung Galaxy smartphone

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From: "Reeder, John" <Reeder.John@epa.gov>

Date: 5/24/17 9:23 PM (GMT-05:00)

To: "Krenik, Edward" <edward.krenik@bracewell.com>

Subject: Re: Question

Ex. 6 - Personal Privacy

Sent from my iPhone

On May 24, 2017, at 7:48 PM, Krenik, Edward <edward.krenik@bracewell.com> wrote:

Ex. 6 - Personal Privacy

Sent from my Verizon, Samsung Galaxy smartphone

EDWARD KRENIK

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From: "Reeder, John" <Reeder.John@epa.gov>

Date: 5/24/17 6:08 PM (GMT-05:00)

To: "Krenik, Edward" <edward.krenik@bracewell.com>

Subject: RE: Question

Ex. 6 - Personal Privacy

FYI – there once was a Nancy Beck in Region 2...she left the agency. She didn't show in our directory, but still showed on the public site. Just one of those smooth operating EPA things

From: Krenik, Edward [<mailto:edward.krenik@bracewell.com>]
Sent: Wednesday, May 24, 2017 5:54 PM
To: Reeder, John <Reeder.John@epa.gov>
Subject: Re: Question

Ex. 6 - Personal Privacy

Sent from my Verizon, Samsung Galaxy smartphone

EDWARD KRENIK
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From: "Reeder, John" <Reeder.John@epa.gov>

Date: 5/23/17 10:00 PM (GMT-05:00)

To: "Krenik, Edward" <edward.krenik@bracewell.com>

Subject: Re: Question

I saw on the public site the listing you're talking about. But I'm glad you found her. Now on to another matter: **Ex. 6 - Personal Privacy**

Sent from my iPhone

On May 23, 2017, at 4:34 PM, Krenik, Edward <edward.krenik@bracewell.com> wrote:

Its Beck not Becks. She is the pol in ORD. We talking same thing here.

Sent from my Verizon, Samsung Galaxy smartphone

EDWARD KRENIK

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From: "Reeder, John" <Reeder.John@epa.gov>

Date: 5/23/17 3:25 PM (GMT-05:00)

To: "Krenik, Edward" <edward.krenik@bracewell.com>

Subject: RE: Question

I see just one in the directory that says OCSPP, and 202 564 1273 phone (not R2 number). What are you seeing? I looked at all the Becks...nothing else close.

Do you want me to reach out and give her a heads up you are trying to reach her? I don't really know her but she probably knows I'm a guy working with Ryan on the 3rd floor.

From: Krenik, Edward [<mailto:edward.krenik@bracewell.com>]

Sent: Tuesday, May 23, 2017 2:41 PM

To: Reeder, John <Reeder.John@epa.gov>

Subject: RE: Question

Yes but it says Region 2.

EDWARD KRENIK

Partner

edward.krenik@policyres.com

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From: Reeder, John [<mailto:Reeder.John@epa.gov>]
Sent: Tuesday, May 23, 2017 2:40 PM
To: Krenik, Edward
Subject: RE: Question

Only one in the directory: beck.nancy@epa.gov

From: Krenik, Edward [<mailto:edward.krenik@bracewell.com>]
Sent: Tuesday, May 23, 2017 1:38 PM
To: Reeder, John <Reeder.John@epa.gov>
Subject: Question

What's Nancy Beck's email and phone number? There seems to be two of them at EPA.

Sent from my Verizon, Samsung Galaxy smartphone

EDWARD KRENIK

Partner
edward.krenik@policyres.com

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<image001.jpg>

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To: Rothenstein, Cliff L.[Cliff.Rothenstein@klgates.com]
From: Reeder, John
Sent: Thur 6/1/2017 6:24:16 PM
Subject: RE: follow up

Kaitlyn Shimmin.

Working in Congressional and Intergovernmental Relations.

Try 564 5200 – I don't have her direct line handy.

V/R

JReeder

564 6082

Ex. 6 - Personal Privacy

From: Rothenstein, Cliff L. [mailto:Cliff.Rothenstein@klgates.com]
Sent: Thursday, June 01, 2017 1:34 PM
To: Reeder, John <Reeder.John@epa.gov>
Subject: RE: follow up

John - sorry to bug you but do you know who Katlyn Shannon (not sure that's the correct spelling) is?

From: Reeder, John [mailto:Reeder.John@epa.gov]
Sent: Monday, May 22, 2017 4:52 PM
To: Rothenstein, Cliff L.
Subject: follow up

Cliff,

I pinged Mandy and she suggested you call her direct line and leave a message because she is out of the office.

The number she gave me is: 202-564-2314

Best,

JReeder

202 564 6082 (direct)

This electronic message contains information from the law firm of K&L Gates LLP. The contents may be privileged and confidential and are intended for the use of the intended addressee(s) only. If you are not an intended addressee, note that any disclosure, copying, distribution, or use of the contents of this message is prohibited. If you have received this e-mail in error, please contact me at Cliff.Rothenstein@klgates.com.

To: Olivia Trombadore [Ex. 6 - Personal Privacy]
From: Reeder, John
Sent: Wed 6/14/2017 1:39:29 PM
Subject: RE: [SPAM] Meeting the Administrator

I'll see what might be possible.

Do you mean to say you're here today thru Friday this week?

JReeder
202 564 6082

-----Original Message-----

From: Olivia Trombadore [mailto:[Ex. 6 - Personal Privacy]]
Sent: Wednesday, June 14, 2017 12:21 AM
To: Reeder, John <Reeder.John@epa.gov>
Subject: [SPAM] Meeting the Administrator

Good Evening John,

I hope you are well!

My name is Olivia Trombadore and I am in EPA region 9. I started in February as a new Remedial Project Manager for California sites in Superfund. It has been quite a whirlwind getting on board and learning everything about EPA!

I am traveling to D.C. for business and would love to meet the administrator. I am in town this Wednesday to Friday. I know he is very busy, so I understand if this is not possible.

All the best,
Olivia Trombadore

Sent from my iPhone



Reimagine HHS

Reimagining How HHS Serves the American People

Overview of Process

EPA-17-0193 and EPA-17-0194-A-001497

Pre-Decisional - DRAFT

Section 1:

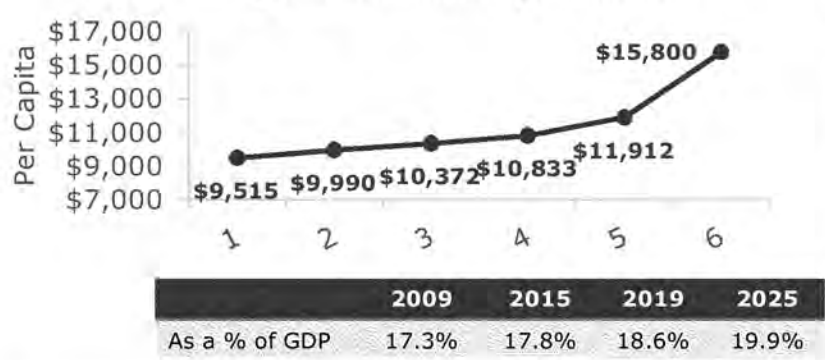
The time for change is now.

Pre-Decisional - DRAFT

We are the world's largest healthcare spender, but our life expectancy gap with other comparative countries is widening

SOARING COSTS

Increasing U.S. Health Expenditures

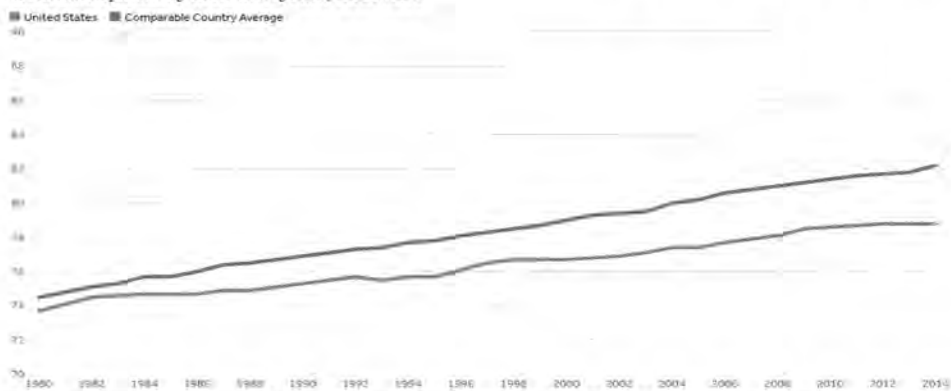


Significant Government Spending (2019, in billions)



POOR HEALTH OUTCOMES

Total life expectancy at birth in years, 1980-2014

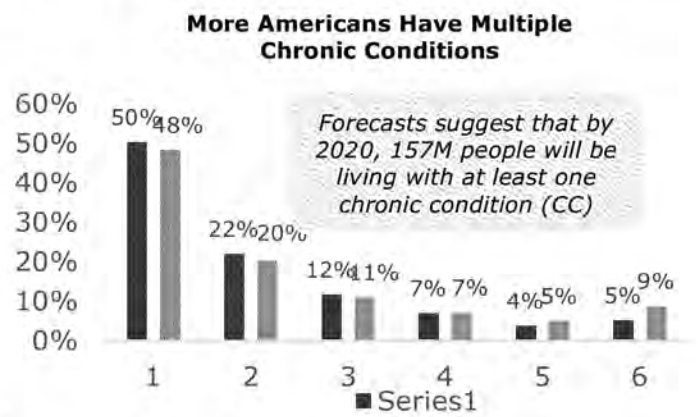
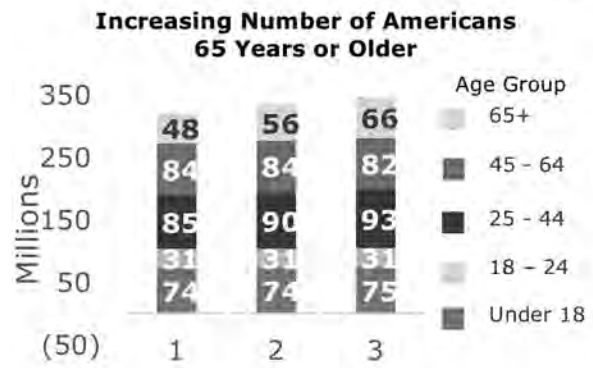


Widening Life Expectancy Gap

We are 12 of 12 among the wealthiest industrialized countries

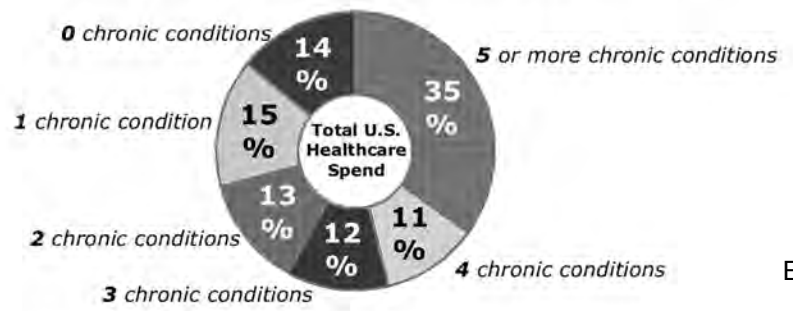
Americans are aging and many have costly chronic conditions

AN AGING POPULATION WITH CHRONIC DISEASE



HIGH COSTS OF CHRONIC CONDITIONS

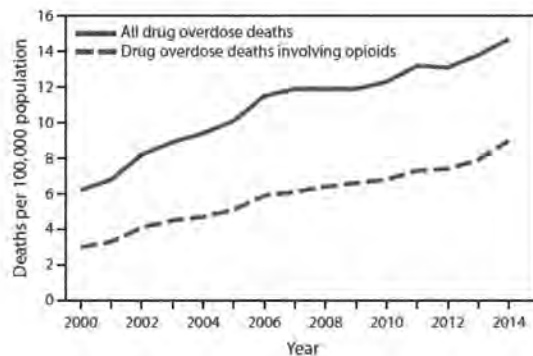
People with 5 or more Chronic Conditions Represent More than a Third of U.S. Healthcare Spend



The United States faces intractable health and social problems that require innovative solutions and bold leadership

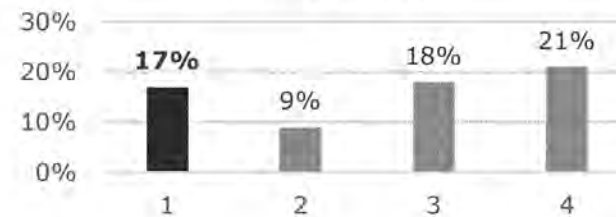
OPIOID CRISIS

Increasing Deaths from Drug Overdose



CHILD OBESITY

High Prevalence of Childhood Obesity (2011-2014)



MENTAL HEALTH

43

million Americans meet the standard for having a mental, behavioural, or emotional disorder that substantially interferes with or limits life activities

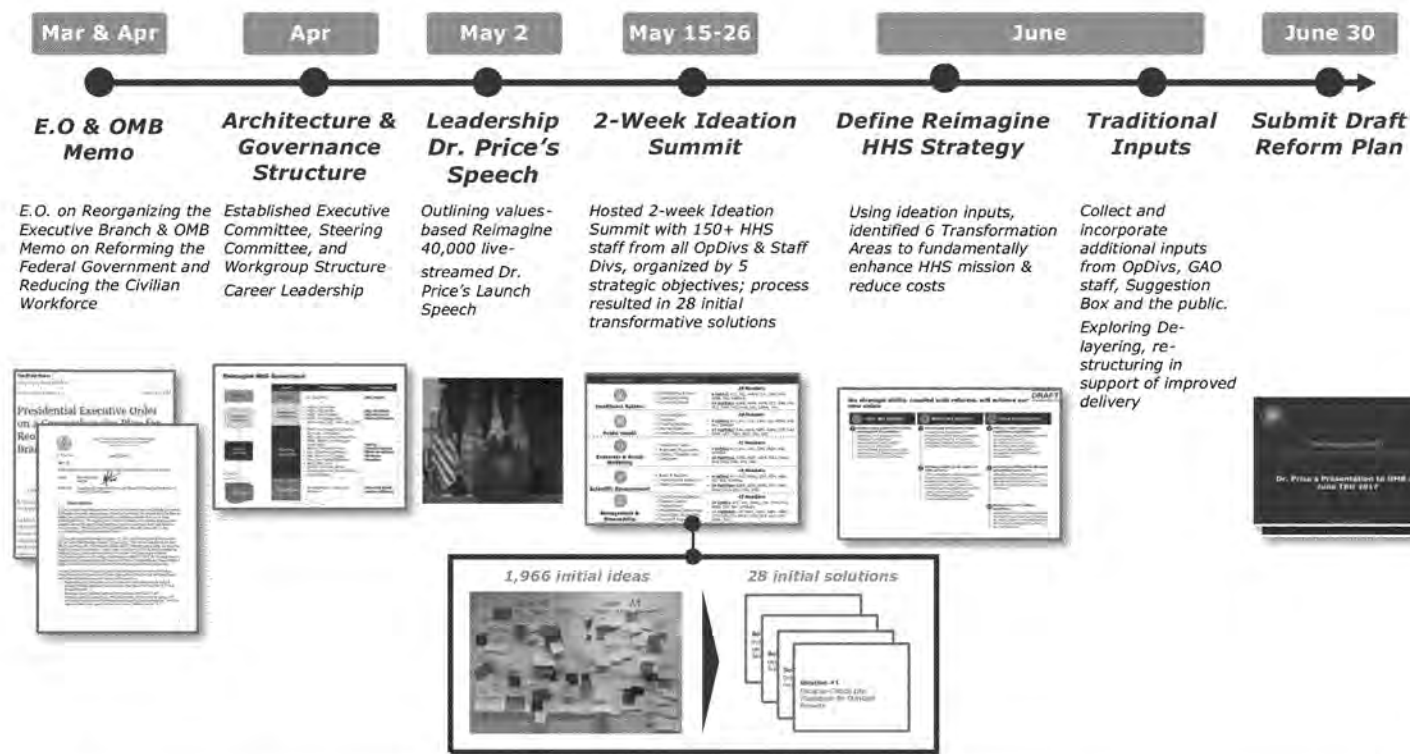
10

million Americans have a serious mental illness

Section 2:

Reimagine HHS sets a new vision.




Reimagine HHS Process



We launched **Reimagine HHS** to turn the tide on rising costs while improving America's health and well-being over the next decade

EPA-17-0193 and EPA-17-0194-A-001503

This vision requires HHS to embrace a catalyst role and prioritize services it is uniquely qualified to deliver...

DIMENSION	TODAY	TOMORROW
 How we Enable <i>Markets, Customers, Channels, Geographies</i>	<i>Prescriptive to Partners</i> <ul style="list-style-type: none"> States, locals, tribes, territories, international locations Clinicians, patients, families, communities Private sector, non profits, academic institutions 	<i>Empowering to Partners</i> <ul style="list-style-type: none"> Same stakeholders as today, while shifting approach to creating opportunities for choice Renewed focus on collaboration with industry and innovators
 What We Deliver <i>Products & Services, Value Prop, Defensible Advantage</i>	<i>Large-scale, siloed funding, focused on compliance</i> <ul style="list-style-type: none"> Disparate funding through grants, cooperative agreements, contracts, and reimbursements aligned to Customers (e.g., healthcare systems) 	<i>Strategic, integrated investments, focused on outcomes</i> <ul style="list-style-type: none"> Customer AND consumer-driven resources and solutions Incentives to drive or correct market dynamics Data and insights
 How We Execute <i>Capabilities, Configuration, Talent, Technology</i>	<i>Legacy roles, tools, and processes</i> <ul style="list-style-type: none"> Diffuse and siloed organizations with unique policies and procedures Large workforce aligned to specific programs or processes Proprietary data systems 	<i>Exponential organization</i> <ul style="list-style-type: none"> Integrated enterprise that maximizes scale for operational efficiency and impact Agile and high-performing workforce Connected data platform that drives a more effective ecosystem

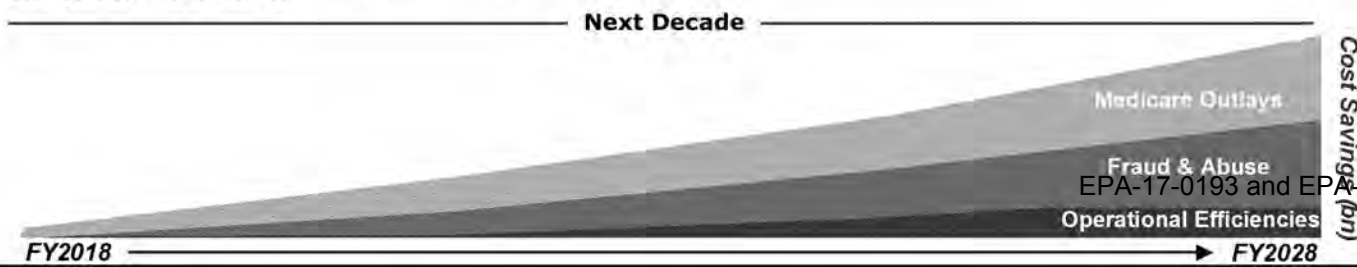
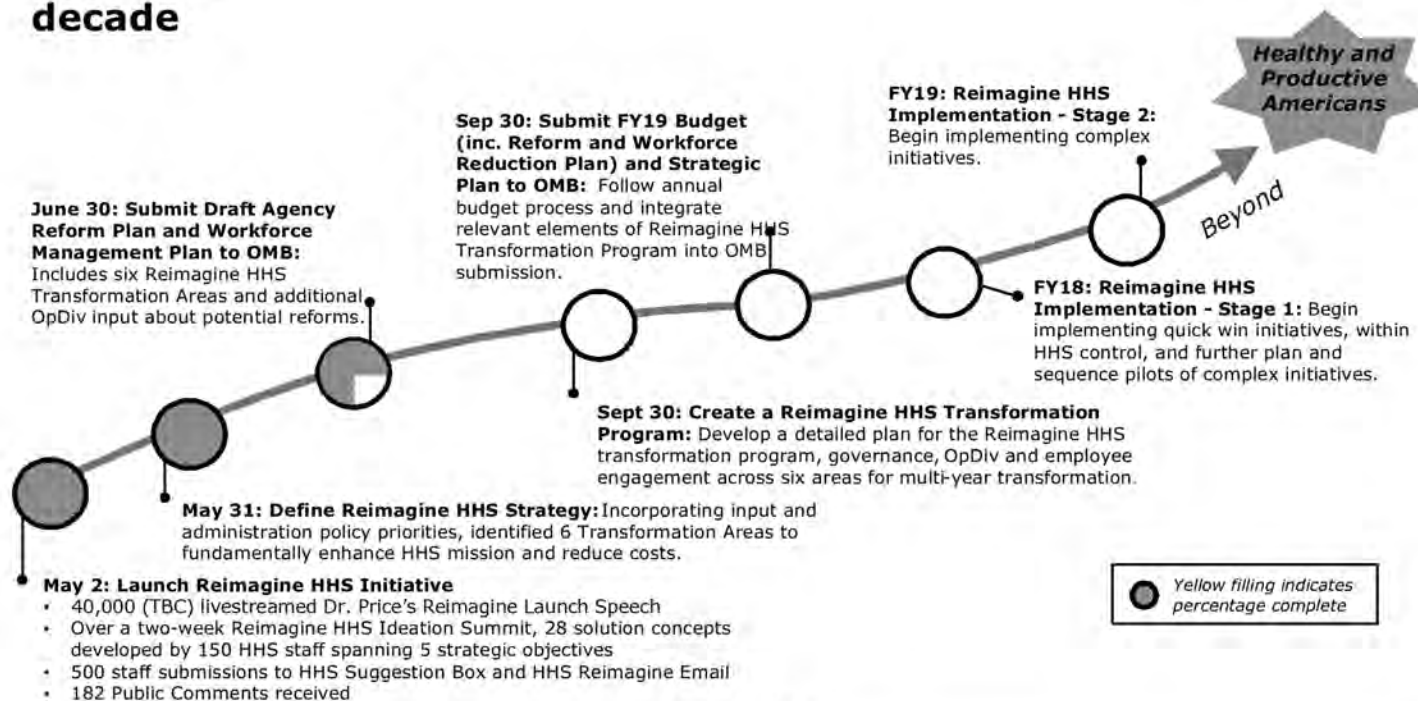
Section 3:

Next Steps

EPA-17-0193 and EPA-17-0194-A-001506

Pre-Decisional - DRAFT

We launched *Reimagine HHS* to turn the tide on rising costs while improving America's health and wellbeing over the next decade



EPA-17-0193 and EPA-17-0194-A-001507

To: Reeder, John[Reeder.John@epa.gov]
From: jack reeder
Sent: Tue 6/13/2017 1:09:18 PM
Subject: Fwd: Follow up and Thank you
Reeder Resume 2017.mht

----- Forwarded message -----

From: **jack reeder** <[REDACTED]> **Ex. 6 - Personal Privacy**
Date: Mon, Jun 12, 2017 at 11:33 AM
Subject: Follow up and Thank you
To: "Tommy (DOEE)" <tommy.wells@dc.gov>

Tommy,

Thanks so much for meeting with me. It was very helpful, not to mention enjoyable. You have had such an amazing career while keeping your focus on public service.

Two things:

1. I'd like to officially (from my EPA account) send an "ask"...would you be willing to host an EPA employee participating in our executive "candidate development program?" These are highly energized/motivated individuals who've gone thru extensive screening and are now looking for executive-level temporary "rotations" to gain experience. I'm on a committee overseeing the program and just trying to help out. Actually, I mentioned to you that I had reached out to Lisa Feldt -- it was about this because I knew she was familiar with the program and might want to host someone at MoCo. **These folks come FREE of charge (to you)** and are looking for opportunities/projects that can be completed (or brought to a significant milestone) within a few months.

2. **Ex. 6 - Personal Privacy**

Again, it was wonderful getting to know the updated Tommy Wells, and I really appreciated the opportunity.

----- Forwarded message -----
From:

To:
Cc:
Bcc:
Date:
Subject:
QUFWUnhRcUVhV3YtNUh4NVlYalZkZzAwMDA=

To: 'Policy Coordinator' [Ex. 6 - Personal Privacy]
joshua.venable@ed.gov[joshua.venable@ed.gov];
Palmer.Wayne.D@DOL.gov[Palmer.Wayne.D@DOL.gov];
vivieca.wright@va.gov[vivieca.wright@va.gov]; geoff.burr@dot.gov[geoff.burr@dot.gov];
lance.leggitt@hhs.gov[lance.leggitt@hhs.gov]; heidi.green@osec.usda.gov[heidi.green@osec.usda.gov];
Jackson, Ryan[jackson.ryan@epa.gov]; Jody.Hunt@usdoj.gov[Jody.Hunt@usdoj.gov];
WTeramoto@doc.gov[WTeramoto@doc.gov]; Byers, Bradley SES SD [Ex. 6 - Personal Privacy]
Cc: McGinley, William J. EOP/WHO [Ex. 6 - Personal Privacy]
From: Sweeney, Kevin SES SD
Sent: Sat 6/10/2017 9:20:16 PM
Subject: RE: Apprenticeship EO

Given this timeline, DoD cannot provide an appropriate review by Sunday at 8PM.

KMS

Kevin M. Sweeney

Chief of Staff

Office of the Secretary of Defense

703-692-7100 (office)

[Ex. 6 - Personal Privacy] (mobile)

Ex. 6 - Personal Privacy

From: Policy Coordinator [mailto: [Ex. 6 - Personal Privacy]

Sent: Saturday, June 10, 2017 11:56 AM

To: joshua.venable@ed.gov; Palmer.Wayne.D@DOL.gov; vivieca.wright@va.gov;
geoff.burr@dot.gov; lance.leggitt@hhs.gov; heidi.green@osec.usda.gov; Sweeney, Kevin SES
SD [Ex. 6 - Personal Privacy] jackson.ryan@epa.gov; Jody.Hunt@usdoj.gov;
WTeramoto@doc.gov

Cc: Policy Coordinator [Ex. 6 - Personal Privacy]

Subject: Apprenticeship EO

ED, DOL, VA, DOT, HHS, USDA, DOD, EPA, DOJ, and DOC:

Attached please find a draft of an Executive Order entitled "Expanding Apprenticeships in America." Your agency manages at least one job training program, or has expressed interest in apprenticeship policy, and therefore we respectfully request your review.

Please return comments to the White House Policy Coordinator **by Sunday, June 11 at 8PM.**

Important—this is an eyes-only distribution. This EO should not be shared beyond the person needed to give adequate review.

Thank you,

White House Policy Coordinator

To: 'Policy Coordinator' [Ex. 6 - Personal Privacy]
Jody.Hunt@usdoj.gov [Ex. 6 - Personal Privacy]; Michael.Britt@dot.gov [Ex. 6 - Personal Privacy]; Sweeney, Kevin SES SD [Ex. 6 - Personal Privacy]; brian.mccormack@hq.doe.gov [Ex. 6 - Personal Privacy]; Scott_Hommel@ios.doi.gov [Ex. 6 - Personal Privacy]; Jackson, Ryan [Ex. 6 - Personal Privacy]; 'Staff Secretary' [Ex. 6 - Personal Privacy]; Wevley, Craig M CAPT USN OSD QUSD ATL
(US [Ex. 6 - Personal Privacy] SD - ExecSec MA [Ex. 6 - Personal Privacy] Sweeney, Kevin SES SD [Ex. 6 - Personal Privacy] Faller, Craig RADM SD [Ex. 6 - Personal Privacy] Bunch, Lance Col SD [Ex. 6 - Personal Privacy] Stoddard, Ryan CDR SD [Ex. 6 - Personal Privacy] Braman, Matthew COL SD [Ex. 6 - Personal Privacy] Walsh, Laurel Col SD [Ex. 6 - Personal Privacy] Donnelly, Sally SES SD [Ex. 6 - Personal Privacy] Byers, Bradley SES SD [Ex. 6 - Personal Privacy] Reid, Eric LtCol SD [Ex. 6 - Personal Privacy]
From: Mohler, Hallock CDR SD
Sent: Thur 6/8/2017 9:33:39 PM
Subject: RE: Permitting Process EO
[Permitting - Staff Sec 6.5.docx](#)
[Army Corps of Engineers Comments on Draft Permitting EO 8 jun 17 \(002\).docx](#)

Policy Coordinator:

1. DoD has reviewed and notes the following from its review of the draft Executive Order:

Ex. 5 - Deliberative Process

2. Also, since the U.S. Army Corps of Engineers Civil Works has a separate regulatory permitting authority, we are submitting for your review the attached comments from the Assistant Secretary of the Army for Civil Works.

Vr,
CDR Hallock "Hal" Mohler Jr.
Executive Secretary
Department of Defense

Office: (703) 692-7120

Ex. 6 - Personal Privacy

-----Original Message-----

From: Policy Coordinator [mailto:Ex. 6 - Personal Privacy]

Sent: Monday, June 5, 2017 11:40 PM

To: Jody.Hunt@usdoj.gov; Michael.Britt@dot.gov; Sweeney, Kevin SES SD [Ex. 6 - Personal Privacy]

Mohler, Hallock CDR SD [Ex. 6 - Personal Privacy]; brian.mccormack@hq.doe.gov;

Scott_Hommel@ios.doi.gov; jackson.ryan@epa.gov

Cc: Policy Coordinator <Ex. 6 - Personal Privacy>

Subject: Permitting Process EO

DOD, DOJ, DOT, DOE, DOI, and EPA --

Please find attached an Executive Order entitled "Establishing Discipline and Accountability to the Environmental Review and Permitting Process for Infrastructure Projects" (Permitting Process EO). The Order references each one of your agencies, and therefore we respectfully request your review. Please return comments to the White House Policy Coordinator by Thursday at 8PM.

Important -- this is an eyes only distribution. This Order should not be shared beyond the person needed to give adequate review.

Thank you,

POLICY COORDINATOR

To: Kelly, Albert[kelly.albert@epa.gov]; Falvo, Nicholas[falvo.nicholas@epa.gov]
Cc: Fonseca, Silvina[Fonseca.Silvina@epa.gov]; Reeder, John[Reeder.John@epa.gov]; Morefield, Deborah A CIV OSD OUSD ATL (US); **Ex. 6 - Personal Privacy**
From: Sullivan, Maureen SES OSD OUSD ATL (US)
Sent: Tue 6/13/2017 1:10:44 PM
Subject: DoD Discussion (UNCLASSIFIED)
[Groundwater DoD Handout for 24 May 2016 OMB Meeting.docx](#)
[EPA Opportunities for Improvements Final.docx](#)
[smime.p7s](#)

CLASSIFICATION: UNCLASSIFIED

Kell and Nick

Thanks again for meeting with us. We appreciate all of the time you took with us.

I meant to send these two files to you last week. These are the documents we gave you. Please let us know if you have any questions.

We look forward to continuing the dialogue.

v/r

Maureen Sullivan
DASD(ESOH)
(703)695-7957

Blackberry Cell; **Ex. 6 - Personal Privacy**

Ex. 6 - Personal Privacy

*****NEW*****

Nicha Jumsil
Executive Assistant
Pentagon, Room 5C646
(703)571-0071

Ex. 6 - Personal Privacy

-----Original Message-----

From: Kelly, Albert [mailto:kelly.albert@epa.gov]
Sent: Monday, June 5, 2017 10:55 AM
To: Reeder, John <Reeder.John@epa.gov>; Sullivan, Maureen SES OSD OUSD ATL (US)
Ex. 6 - Personal Privacy
Cc: Fonseca, Silvina <Fonseca.Silvina@epa.gov>; Falvo, Nicholas <falvo.nicholas@epa.gov>
Subject: [Non-DoD Source] RE: connection

Thank you John. I look forward to speaking with you Ms. Sullivan.

Albert Kelly
Senior Advisor to the Administrator
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Ex. 6 - Personal Privacy

From: Reeder, John
Sent: Monday, June 5, 2017 10:52 AM

To: Kelly, Albert <kelly.albert@epa.gov>; Sullivan, Maureen SES OSD OUSD ATL (US)

Ex. 6 - Personal Privacy

Cc: Fonseca, Silvina <Fonseca.Silvina@epa.gov>

Subject: connection

Good Morning,

I'm writing simply to connect you two. Maureen is a friend from my days in EPA's federal facility office, and has been a great colleague and key player on federal facility policy and DoD clean ups. Albert (known as Kell) is leading Administrator Pruitt's initiative on Superfund acceleration/streamlining.

Maureen, I spoke with Kell, who welcomes a chance to talk. You can reach him via email or phone 202 564 5086.

Maureen's number is Ex. 6 - Personal Privacy

Of course let me know if I can be of assistance in any way. My numbers follow.

V/R

John E. Reeder

202.564.6082 (direct)

Ex. 6 - Personal Privacy (mobile)

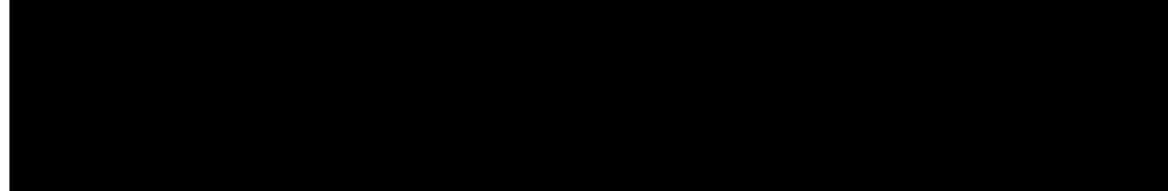
CLASSIFICATION: UNCLASSIFIED

To: Kelly, Albert[kelly.albert@epa.gov]; Reeder, John[Reeder.John@epa.gov]
Cc: Fonseca, Silvina[Fonseca.Silvina@epa.gov]; Falvo, Nicholas[falvo.nicholas@epa.gov]
From: Sullivan, Maureen SES OSD OUSD ATL (US)
Sent: Thur 6/8/2017 5:33:00 PM
Subject: Re: [Non-DoD Source] RE: connection - meeting with DoD

I am here for our 1:30 meeting. I am in the lobby. Need to have some one sign us in.

Thanks
Maureen

Sent from my BlackBerry 10 smartphone.



Thank you John. I look forward to speaking with you Ms. Sullivan.

Albert Kelly
Senior Advisor to the Administrator
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Ex. 6 - Personal Privacy

From: Reeder, John
Sent: Monday, June 5, 2017 10:52 AM
To: Kelly, Albert <kelly.albert@epa.gov>; Sullivan, Maureen SES OSD OUSD ATL (US)
Ex. 6 - Personal Privacy
Cc: Fonseca, Silvina <Fonseca.Silvina@epa.gov>
Subject: connection

Good Morning,

I'm writing simply to connect you two. Maureen is a friend from my days in EPA's federal facility office, and has been a great colleague and key player on federal facility policy and DoD clean ups. Albert (known as Kell) is leading Administrator Pruitt's initiative on Superfund acceleration/streamlining.

Maureen, I spoke with Kell, who welcomes a chance to talk. You can reach him via email or phone 202 564 5086.

Maureen's number is

Ex. 6 - Personal Privacy

Of course let me know if I can be of assistance in any way. My numbers follow.

V/R

John E. Reeder

202 564 6082 (direct)

Ex. 6 - Personal Privacy (mobile)

To: Sullivan, Maureen SES OSD OUSD ATL (US) **Ex. 6 - Personal Privacy**
From: Reeder, John
Sent: Tue 6/6/2017 1:43:02 PM
Subject: RE: connection (UNCLASSIFIED)

Hi Maureen,
I just rang you and got a very professional assistant.

Ex. 5 - Deliberative Process

If you want the "lay of the land," Silvina has a good perspective on the whole project (as a career person on detail here on third floor). Her home office is Jim Woolford's, so she has deep knowledge of the clean up program. Her number is 202 564 1955.

Enjoy your week!
John
202 564 6082

-----Original Message-----

From: Sullivan, Maureen SES OSD OUSD ATL (US) **Ex. 6 - Personal Privacy**
Sent: Monday, June 05, 2017 11:13 AM
To: Reeder, John <Reeder.John@epa.gov>; Kelly, Albert <kelly.albert@epa.gov>
Cc: Fonseca, Silvina <Fonseca.Silvina@epa.gov>
Subject: RE: connection (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Thanks John

Kell -- Would be glad to talk. The DoD team has several areas of concern with EPA's approach to the Superfund sites -- driving up costs dramatically with little to no environmental benefit. I will reach out to you later today to set up a time when we can meet. Appreciate you taking the time.

Maureen Sullivan
DASD(ESOH)
(703)695-7957
Blackberry Cell **Ex. 6 - Personal Privacy**
Ex. 6 - Personal Privacy

*****NEW*****

Nicha Jumsil
Executive Assistant
Pentagon, Room 5C646
(703)571-0071
nicha.jumsil.ctr@mail.mil

-----Original Message-----

From: Reeder, John [mailto:Reeder.John@epa.gov]
Sent: Monday, June 5, 2017 10:52 AM
To: Kelly, Albert <kelly.albert@epa.gov>; Sullivan, Maureen SES OSD OUSD ATL (US)

<maureen.sullivan18.civ@mail.mil>
Cc: Fonseca, Silvina <Fonseca.Silvina@epa.gov>
Subject: [Non-DoD Source] connection

Good Morning,

I'm writing simply to connect you two. Maureen is a friend from my days in EPA's federal facility office, and has been a great colleague and key player on federal facility policy and DoD clean ups. Albert (known as Kell) is leading Administrator Pruitt's initiative on Superfund acceleration/streamlining.

Maureen, I spoke with Kell, who welcomes a chance to talk. You can reach him via email or phone 202 564 5086.

Maureen's number is 703 695 7957.

Of course let me know if I can be of assistance in any way. My numbers follow.

V/R
John E. Reeder
202 564 6082 (direct)

Ex. 6 - Personal Privacy

 (mobile)

CLASSIFICATION: UNCLASSIFIED

From: Kaminer, Joan Kaminer.Joan@epa.gov 
Subject: American Oversight v. EPA (18-364)
Date: September 10, 2018 at 10:07 AM
To: Sara Creighton sara.creighton@americanoversight.org
Cc: Wechsler, Peter (CIV) Peter.Wechsler@usdoj.gov, Daniel.Mcgrath@americanoversight.Org

JK

Sara,

Please find attached one additional record responsive to request EPA-HQ-2018-008850 and an updated index of records released. This record is released in part with information withheld under FOIA Exemption 6.

Please contact to Peter Wechsler if you have any questions.

Regards,

Joan G. Kaminer
Attorney-Advisor
EPA/OGC/GLO/ILPG
202-564-0334
Kaminer.joan@epa.gov



ED_001523B_00
00125...81.pdf



American
Oversi...ex.xlsx

To: Ford, Hayley[ford.hayley@epa.gov]
Cc: Hupp, Millan[hupp.millan@epa.gov]; Robin Jones[robin.jones@sallt.com]
From: Wes Lane
Sent: Tue 9/5/2017 6:25:29 PM
Subject: Re: SALLT & Museum of the Bible Grand Opening - speaking request

Thank you Hayley! Let me also direct you to our point person on the project, Robin Jones, who is the "repository of all knowledge" for anything you might need to know. I cc her herein. We are grateful to all of you!

On Tue, Sep 5, 2017 at 1:09 PM, Ford, Hayley <ford.hayley@epa.gov> wrote:

Hello Wes,

I hope you're having a good start to your week. I wanted to reach out and introduce myself as your primary contact for the below event and any future scheduling requests for the Administrator. We are confirmed for the morning of December 8th and look forward to it. If you have any questions, feel free to reach out to me. As we get closer, I will likely reach out for additional details.

Thank you!

Hayley Ford

Office of the Administrator

Environmental Protection Agency

Room: 3309C William Jefferson Clinton North

ford.hayley@epa.gov

Phone: [202-564-2022](tel:202-564-2022)

Cell: [202-306-1296](tel:202-306-1296)

From: Wes Lane <wlane@sallt.com>

Date: June 14, 2017 at 12:48:48 PM EDT

To: Edward Pruitt <[Personal Email/Ex. 6]>

Cc: Sydney Hupp <[Personal Email/Ex. 6]>, Millan Hupp <[Personal Email/Ex. 6]>

Subject: Re: SALLT & Museum of the Bible Grand Opening - speaking request

Yippee! Thanks Scott!

On Tue, Jun 13, 2017 at 6:52 PM, Edward Pruitt <**Personal Email/Ex. 6**> wrote:

Greetings Wes --- how wonderful to receive your email. Please know I appreciate your prayers and encouraging words. With regard to connecting with you and your Sallt colleagues, it would be a pleasure and privilege to do so. I will forward this to the scheduling team, and they will go to work on it and see what can be done. See you soon, I trust, and Godspeed my friend! Keep interceding!

Sent from my iPhone

On Jun 12, 2017, at 11:36 AM, Wes Lane <wlane@sallt.com> wrote:

Hi Scott,

You're in my prayers my brother! I'm proud of you. Keep draining... :)

So, doubtless you know the Museum of the Bible's grand opening is coming up this fall. SALLT is hosting a special trip for that opening December 6 thru 8. We brought around 25 alumni to the topping out ceremony last fall. James Lankford met us and gave us a "prayer walk" Capitol tour.

I expect we'll have 25 - 50 SALLT alumni for this event Scott, and we are hoping to intersect with you while in DC like we did with James last time. Our first thought is to have you meet our group at our hotel for breakfast on Friday Dec 8, but if that isn't optimal for you, we'd work with you for other opportunities. The museum actually has a lot of neat stuff taking place for us - including the Broadway musical production of "Amazing Grace" in the museum theater on Thursday night. Heck, you might want to come with us!

Anyway, I'm tossing this out way in advance and will work with whomever you want. These are your people my friend and we would love to have you share your SALLTy heart & thoughts as you feel led. I've no doubt they would deeply appreciate you sharing with them.

Thanks Scott, please let me know your thoughts or send someone my way to work details.

God bless!

Wes

--

Wes Lane

President, SALLT

(Salt and Light Leadership Training)

PO Box 270084 / OKC, OK 73137

wlane@salit.com / www.salit.com

--

Wes Lane

President, SALLT

(Salt and Light Leadership Training)

PO Box 270084 / OKC, OK 73137

wlane@salit.com / www.salit.com

--

Wes Lane

President, SALLT

(Salt and Light Leadership Training)

PO Box 270084 / OKC, OK 73137

wlane@salt.com / www.salt.com